PEOLPLE'S DEMOCRARTIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
LARBI BEN M'HIDI UNIVERSITY CENTRE. OUM EL BOUAGHI
INSTITUTE OF LETTERS AND LANGUAGES
DEPARTMENT OF ENGLISH

Registration No. :

ATTITUDES AND STRATEGIES IN SELF-DIRECTED LEARNING OF ENGLISH

A CASE STUDY OF SECOND-YEAR LMD STUDENTS OF ENGLISH AT MENTOURI UNIVERSITY OF CONSTANTINE

THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE MAGISTER DEGREE IN APPLIED LINGUISTICS AND FOREIGN LANGUAGE TEACHING

Submitted by:
Mr. **Ramzi NOUIOUA**

Supervised by:
Prof. **Hacène SAADI**

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Chairman: Prof. Zahri HAROUNI	(MENTOURI University of Constantine)
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OUM EL BOUAGHI, 2007.

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Dedication

To my dear parents and in loving memory of my eldest brother who taught me never to accept conventional wisdom as a solution to a vexing problem; but to explore it from multiple dimensions, and arrive at my own solution to the problem that may not be conventional, but will always be wise.

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I would like to thank all the people whose contributions have helped me to carry out this research paper. First of all, Prof. ***Hacène SAADI***, my supervisor, deserves special thanks and appreciation for his guidance and diligent useful comments throughout the time in which the study has taken place.

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Abstract

Our study aims to explore the attitudes and strategies in self-directed learning of English among eighty two university students of English, taken as a sample, at MENTOURI University of Constantine, Algeria, and their relationship with their level of achievement. The results of tests of correlation indicate that both attitudes and strategies correlate positively and significantly with their level of achievement. The results of a one-way ANOVA, completely randomised one variable between subjects design, show significant differences in attitudes and strategies among the three achievement groups: a) low, b) mid, and c) high. High achievers show more confidence in their abilities, display more awareness about their role as language learners, prove to recognise the importance of initiative in learning and independence, and use more strategies for persistent learning than the other learners. Furthermore, the results of a multiple regression analysis indicate that attitudes and strategies in autonomous learning of English explain 31% of the variation in the learners' level of achievement, thus proving to be good predictors of outcomes.

List of Abbreviations

ANOVA	Analysis of variance.
AS	Affective strategies.
ATCAB	Attitudes towards confidence in abilities.
ATINL	Attitudes towards initiative in learning.
ATRL	Attitudes towards the role of the learner.
ATRT	Attitudes towards the role of the teacher.
CS	Cognitive strategies.
IPS	Information-processing system.
LOA	Level of achievement.
MS	Metacognitive strategies.
SDLL	Self-directed language learning
SLA	Second language acquisition.
SPL	Strategies for persistent learning.
SS	Social strategies.

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INTRODUCTION

Over the years, learning has been attributed a number of divergent definitions. It has evolved from a relatively permanent change in the individual's potential behaviour due to (reinforced) experience and practice to the processing of information by individuals during a life time, and recently to an individual's active construction of knowledge (Fontana, 1995). The two former definitions reflect two divergent (descriptive and prescriptive) theories of learning: *Behaviourism* and *Cognitivism*. The latter definition reflects, as a matter of fact, an amalgam of various theories and traditions widely known as *Constructivism*.

With the foremost impact of Piaget's epigenetic epistemology, schema theory, and insights on development, the one cornerstone of constructivism is that knowledge is constructed; it is not received (Johansson & Gärdenfors, 2005). For learning and instruction are the main focus of the theory, the notion of construction of knowledge has far-reaching implications for numerous aspects of instruction and education. The common universal goals of constructivism are for the learner to develop problem-solving skills, reasoning skills, cognitive skills, critical thinking, and self-regulated learning, that is, the ability to engage in independent thought. Even though constructivism has never been a major force in mainstream psychology, it is currently the dominating paradigm in education.

Nevertheless, it is quite tactless to claim one of these theories (more particularly constructivism) to be an encompassing theory for how learning happens and works. The current lack of a unifying theory of learning explains the diversity of more or less numerous successful researches that have been made to ground new educational initiatives in existing theories from psychology and cognitive science.

Language, being a cognitive skill (Anderson, 1983), has been the centre of interest for many researchers, more particularly second or foreign languages' instructors and teachers. With a growing need for more effective, successful, and active ways of second or foreign language learning at almost all levels, including higher education, many researchers have called into question the importance of investigating the impact of attitudes (as a psychological concept) on learners' level of language achievement, and how more successful second or foreign language learners process linguistic information, store it, use it, and manage their language learning to serve as an ideal model of a would-be successful learning. These researchers are prompted by their faith that attitudes (cognitive beliefs, affect, and behaviour) about the learning context, the self, and the significant other are most likely to influence every aspect of the learning and educational processes (actions, aims, methods, and strategies).

Having a similar faith in the relative importance of learners' beliefs about learning (English language learning for our case), human agency, and the efficacy of self-awareness of the knowledge construction process, our present piece of research is intended to explore English language learners' used strategies and predisposition to exercise self-direction in learning, estimate the magnitude of their contribution to the level of achievement in English language learning among a number of university learners of English at MENTOURI University of Constantine, and suggest some practical recommendations for more educational and learning gains.

1. Aims and Scope of Research

With two forthcoming chapters as a theoretical support for our empirical work, considering the theoretical impact of learners' attitudes and usefulness of their learning strategies on their level of achievement and success, we set our primary, exploratory research aims and purposes as follows: a) have a closer look at the participating learners' psychological predisposition that would enable them to take responsibility of their learning process; b) know about their learning practices and strategies; c) determine how self-directed language learning attitudes would be connected to learners' strategies; and d) see the extent to which both sets of factors would contribute to and be associated with their level of achievement.

The achievement of our research aims would have, too, some specific pedagogical implications to implement in our higher education context, where we believe that there is seemingly a growing support for autonomous language learning. Thus, if language students display a positive tendency towards exercising self-direction in their learning process and show significant use of effective learning practices and strategies that are significantly associated with their level of achievement and success as language learners, there will be empirical support to confirm our hypotheses, and we will promote autonomous learning in second or foreign language classrooms.

Additionally, another methodological implication our study could raise is the use of structural equation modelling as a statistical methodology that is becoming of a great importance to many researchers in different scientific fields, at the present time. For structural equation models are usually conceived in terms of not directly measurable, and possibly not (very) well-defined theoretical or

hypothetical constructs as attitudes, motivation, goals, intelligence, strategies, and personality.

2. Research Questions

Our piece of research aims at addressing four research questions:

a) *What are the psychological predispositions (attitudes) the participating language learners report themselves as having towards self-directed English language learning?*

b) *What are the different learning strategies the participating learners report themselves as using in their self-directed learning of English language?*

c) *What are the significant associations that exist between the participating learners' reported attitudes, strategies, and level of achievement?*

d) *What are the general characteristics of successful English language learners among the participating students in the sample?*

3. Methodology

3.1. Participants

The participants, in this study, were 102 undergraduate EFL students recruited from six classes at MENTOURI University of Constantine. The students were enrolled in their second year for a BA degree in English language and literature, within the newly implemented system, LMD. Second year BA degree courses placed some emphasis on English grammar, speaking and writing skills. The final sample consisted of eighty two students (males 19.51%,

16; females 80.49%, 66), after twenty students were rejected because: a) seventeen students' responses had missing values or were double-scaled (i.e. students attributed two different scaling values to the same item); and b) three students were excluded from the three courses taken into account in our study. The participants' ages ranged from eighteen to twenty. At the time of the study, all of the students have already studied English for six years (five years during their secondary education and one year during their university study). It was, thus, assumed that the participants, in our study, would provide a homogeneous sample in terms of their instructional input and cultural environment.

3.2. Procedure

The participants completed a questionnaire composed of two parts; a) Part A is composed of twenty one self-directed attitudinal items; and b) Part B is composed of thirty seven self-directed language learning strategies, including a few number of language use strategies (communication strategies). All students received uniform instructions on how to complete the questionnaire. As it stands to reason that self-reporting is, at times, viewed as suspect because of likely bias, and prior to the completion of the questionnaire, which was administered to students in class, they were informed that: a) the questionnaire was not a test; b) there were no right or wrong answers to the items, that is, items were only statements; c) the study was not associated with the instructor or the university; d) they were not required to identify themselves in the questionnaire, and of utmost importance, e) the obtained responses would be handled with absolute confidentiality, coded with identification numbers, and

would not be revealed to other people without their permission and agreement. We administered the questionnaires to the students in the presence of their respective instructors. It took the students about 50 minutes to complete the questionnaires, which were, then, collected to encode for analysis.

However, in regard to students' identifications and confirmation of their scores on the three skills taken into account in the study to represent their level of achievement, we should mention that the questionnaires were not administered randomly, but scrupulously to ensure the match. Each questionnaire was assigned a coded identification number, and administered to a specific student, with their instructors' agreement and cooperation.

3.3. Instruments

For the existing instruments could not be adequately sensitive to an Algerian EFL context, our designed questionnaire concerned with the multiple facets of self-directed language learning attitudes and strategies was developed. The designing of the questionnaire was guided by the tenet of merging the suggested theoretical input in the works of Broady (1996), Cotterall (1995), Hedge (2000), O'Malley and Chamot (1990), Oxford's (1990), Rivers (2001), and Gan (2004). At the start, some first-hand pieces of information were derived from a pilot study, casual discussions and held interviews with students and teachers. We thought it advantageous to make use of these original responses, as well as the theoretical literature put forward, so that a context-sensitive depiction of students' self-directed attitudes and strategies would result. On these bases, the various features of self-directed learning attitudes and strategies our study intended to investigate comprise: a) self-directed language learning

attitudes consisting of attitudes towards confidence in abilities (4 items), attitudes towards the role of the learner (7 items), attitudes towards the role of the teacher (5 items), and attitudes towards initiative in learning (5 items); and b) self-directed language learning strategies consisting of cognitive strategies (13 items), metacognitive strategies (11 items), affective strategies (5 items), strategies for cooperative learning (4 items), and strategies for active and determined (persistent) learning (4 items). Students were requested to respond to the items in Part A along a 5-point Likert scale, where 1 indicates a strong disagreement, 2 moderate disagreement, 3 indicates neither agreement nor disagreement, 4 moderate agreement, and 5 indicates a strong agreement. Likewise, students were asked to report the frequency use of strategies listed in Part B along a 5-point Likert scale, too, where 1 indicates that the strategy is never used, 2 seldom used, 3 sometimes used, 4 usually used, and 5 indicates the most frequently used strategy. We used Likert's method of summated ratings for its simplicity and facility in measuring the extent and intensity of respondents' responses (Oskamp & Schultz, 2005).

In addition, students level of achievement was measured by considering an average calculated from the students' obtained scores in three modules that are specifically related to language mastery, within the first semester of the academic year 2005-2006: a) grammar; b) oral expression; and c) written expression. The students' scores were obtained from the Head of the Department of English, at MENTOURI University of Constantine.

3.4. Research Hypotheses

As a main step in order to conduct our present research, we put forward two major research hypotheses:

Hypothesis 1 posits that the *reported measures of the participating learners' attitudes and strategies in self-directed learning of English correlate significantly (either positively or negatively) with their level of achievement.*

Hypothesis 2 posits that the *reported measures of the participating learners' attitudes towards self-directed learning of English correlate significantly (either positively or negatively) with their frequency use of language learning strategies.*

3.5. Analyses

All the data pertaining to the statistical hypotheses were processed with the aid of the statistical software package, Analyse-it + General, release 1.71, for Microsoft Windows Excel (ANALYSE-IT SOFTWARE LTD, 2003). The specific statistical methods involved are: a) descriptive statistics to identify the overall characteristics concerning the students' reported self-directed language learning attitudes and strategies; b) Pearson product-moment correlations between the students' scores for both sets of factors and their level of achievement; c) multiple regression analyses were, subsequently, performed in order to identify the best predictors from the two sets of factors taken independently and simultaneously; and d) a one-way between subjects ANOVA was used to examine in great detail how self-directed language learning attitudes and strategies might vary across the three classified groups (high-level achievers, mid-level achievers, and low-level achievers). For more information about the choice of these statistical tools, their assumptions and aims, see the appendix.

4. Structure of the Thesis

In order to reach the aims and objectives of our investigation, we divide our research paper into three main chapters. The first chapter provides: a) a synthesised historical theoretical background and review on attitudes in psychological and second or foreign language learning literature; b) comprehensive insights into a number of complexities encountered by attitude researchers when dealing with attitudes; c) a detailed picture of the multidimensionality of the concept of attitude; and d) a number of theories about attitudes.

The second chapter provides a theoretical support for cognition and learning strategies in language learning: a) it offers an overview of the cognitive approach to language learning ; b) it demonstrates an information-processing system that could universally be used to account for the process of language learning; c) it considers the concept of learning strategies as being specific actions taken by a learner to enhance learning; and d) it gives three taxonomies for learning strategies that are specifically used in second or foreign language learning put by O'Malley and Chamot (1990), Oxford (1990), and Cohen (1998).

The third chapter represents our fieldwork that includes: a) a pilot study that is of a great significance in determining more precisely our hypotheses and actually our risks; b) an interpretation of the obtained results through a meticulous examination of the associations between learners' reported attitudes, strategies, and level of achievement; c) a discussion of our results and whether they display

any agreement with the current SLA research results; d) a conclusion; and e) some recommendations and implications to work with for better learning, instruction, and investigation.

Chapter 1

ATTITUDES

1. The Concept of Attitude

In the most conspicuous definitions of attitude throughout the history of the concept, the evolution goes from the most general and less technical to the most elaborated and technical, reflecting the development of psychology as a scientific discipline (more particularly 'social psychology', the term 'attitude' being widely used in that specialisation of psychology). A number of existing definitions are chronologically listed as follows:

"*An attitude is a tendency to act toward or against something in the environment which becomes thereby a positive or negative value*" (Bogardus, 1931, p. 62).

"*An attitude is a mental or neural state of readiness, organised through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related*" (Allport, 1935, p. 810).

"*An enduring organizational, motivational, emotional, perceptual, and cognitive process with respect to some aspect of an individual's world*" (Krech & Crutchfield, 1948, p. 152).

Recent influential attitude theorists have as well offered a variety of definitions of attitude. However, many of them retained a central focus on behaviour:

"*An attitude is an idea charged with emotion which predisposes a class of actions to a particular class of social situations*" (Triandis, 1971, p. 2).

"*An attitude is a learned predisposition to respond to an object in a consistently favorable or unfavorable way*" (Fishbein & Ajzen, 1975, p. 6).

"*An attitude is a relatively stable, emotionalized predisposition to respond in some consistent way toward some person or group of people or situations*" (Zimbardo, 1979, p. 647).

"*Attitude is a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor*" (Eagly & Chaiken, 1993, p. 1).

"*An attitude is a predisposition to respond in a favorable or unfavorable manner with respect to a given attitude object*" (Oskamp & Schultz, 2005, p. 9).

Common to all of these definitions are both the idea that : a) attitudes are *evaluating judgements* (involving beliefs) towards certain objects, expressed in terms of *favourability or unfavourability* (involving affect); and b) the idea that attitudes are personal predispositions to *behave* in certain ways (involving behaviour). It is worth noting that the attitude object can be broadly defined as including behaviour, proposals, and abstract ideas. Moreover, it can be viewed as means, instrumental to attain various goals. Consequently, attitudes are determined by the underlying principle that the attitude object, in fact, brings about goal attainment, and the goals, in question, are issues and affairs individuals are most likely to be interested in.

Henceforward, we consider the aforesaid ideas as the basic elements making up the core concept of an attitude. Furthermore, on the one hand, it would be noted that, in our conceptualisation of attitude both for empirical and theoretical reasons that will come in subsequent sections within this chapter, we make no distinction between beliefs, goals, behaviours, affects, and attitudes (evaluating judgements). Our commitment will be to the view that they are all cognitive structures, that is to say, mentally represented (Rosenberg, 1960; Carlston & Smith, 1996; Wegener &

Carlston, 2005). Kruglanski and Stroebe (2005) reported that "*the distinction between beliefs, goals, attitudes, behaviors, and affects is misleading*" (p. 327). Kruglanski and Stroebe (2005) stated, too, that:

> "*The beliefs that represent these constructs* [beliefs, goals, attitudes, behaviours, and affects] *have different contents, and these contents carry entirely different implications. Goals may have energizing properties, behaviors act on the environment, affects may have physiological underpinnings, etc. Nonetheless, the notion that they all constitute mental representation or beliefs is not trivial*" (p. 327).

On the other hand, such an assumption has another implication for one more definitional concern of whether to treat attitudes as stable or unstable. Viewed as learned structures that dwell in long-term memory, attitudes appear to be enduring over long periods of time, and will be recalled rather than reconstructed on temporarily accessible, available information. One explanation is provided by Eagly and Chaiken (1993) to view attitudes as long-term structures; they argued that "*in daily life direct retrieval may be the rule rather than the exception*" (p. 112).

Interestingly, a growing literature of research advocates that attitudes are less stable and enduring than has been traditionally presumed. Erber, Hedges, and Wilson (1995) suggested that attitudes "*depend on what people happen to be thinking about at any given moment*" (p. 433). Within a similar vein, Potter (1998) supported the changeability of the individual's expressed attitude, telling that "*the same individual can be found offering different evaluations on different occasions, or even during different parts of a single conversation*" (p. 244). Accordingly, attitudes are *context-dependent* and fluctuate over time. This fact puts forward the idea that, occasionally, individuals can change their attitudes, particularly when they

analyse reasons for which they hold them. In the light of this expectation, momentary or incidental impacts upon attitudes would give rise to conceptualising attitudes as construction models (Erber et al., 1995). Therefore, attitudes can be constructed on the spot, and would remain stable to the extent that respondents form, at each time, similar mental representations of the attitude object (Oskamp & Schultz, 2005).

Lord and Lepper (1999), who argued for an intermediate positioned theory of attitudes as learned constructs and as construction models, assumed that a person's response to any attitude-relevant stimulus "*will depend not only on the perceived properties of that stimulus and the situation surrounding it, but also on the subjective representation of that stimulus by the person*" (p. 269). Their *matching* postulate suggested that:

> "*the closer the match between the subjective representations and perceived immediate stimuli to which the person is responding in one situation and the subjective representations and perceived immediate stimuli to which the person is responding in anther situation, the more consistency there will be in the person's responses*" (Lord & Lepper, 1999, p. 269).

Thus, people construct a summary evaluation that is based on joint knowledge structures, which are either strongly associated with the object representation, or are momentarily accessible at the time of judgement.

Drawing on the basis of the previous lines of reasoning, our commitment will be to the view of attitudes as evaluating judgements that can vary in their stability, on

different occasions. Still, our commitment does not imply that every attitude has, by necessity, to be constructed anew.

2. Attitudes in Psychological Literature

A brief investigation of the literature of social psychology shows that the study of attitudes takes the lion's share within this specialisation of psychology. As a matter of fact, the field of social psychology was originally defined as the study of attitudes. Allport (1968) considered attitude as "*the most distinctive and indispensable concept in contemporary American social psychology*" (p. 59). This fact explains the massive number of studies conducted on attitudes (Krueger & Reckless, 1931; Bogardus, 1931; Allport, 1935, 1968; Corey, 1937; Krech & Crutchfield, 1948; Triandis, 1971; Zanna & Rempel, 1988; Kelley, 1989; Lord & Lepper, 1999; Eagly & Chaiken, 1993; Oskamp & Schultz, 2005; Fabrigar, MacDonald, & Wegener, 2005).

Up to that time, the central point of interest in the study of attitudes is to account for and predict behaviour. Corey (1937) investigated the extent to which students' behaviour was related to their attitudes towards cheating. He measured the college learners' attitudes towards cheating, at the beginning of the semester, and imparted various chances to cheat by allowing them to tally their own test. However, no virtual correlation between college learners' attitudes and their actual (cheating) behaviour was to his dismay. Many other investigators attempted to predict and to explain human behaviour (Bernberg, 1952; Vroom, 1964; Himlstein & Moore, 1963; DeFleur & Westie, 1958; Linn, 1965; Dean, 1958; Wicker & Pomzal; 1971). Deceptively, attitudes were usually found to be, to a given extent, poor predictors of actual behaviour, and results obtained showed inconsistencies (Blumer, 1955; Campbell, 1963; Deutscher, 1966; Festinger, 1964).

In a provocative review of this literature, Wicker (1969) reported that:

> *"Taken as a whole, these studies suggest that it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviors than that attitudes will be closely related to actions. Product-moment correlation coefficients relating the two kinds of responses are rarely above .30, and often are near zero"* (p. 65).

On the basis of this empirical evidence, Wicker called for abandoning the attitude construct.

As expected, investigators, maintaining their faith in the predictive strength of attitudes, has since come to defend the attitude construct by offering plausible explanations for the observed *inconsistencies* in attitude-behaviour relationship such as response bias (measurement distortion), that is, not reflecting the person's true attitude (Campbell, 1950; Guilford, 1954). Response bias is the tendency of the respondent to give socially a desirable response, that is to say, the respondent is likely to answer in the way he or she thinks the researcher would like (Vernon, 1934; Lenski & Legget, 1960; Bernreuter, 1933; Ehrman & Oxford, 1995). Hence, investigators suggested novel attitude measures that would be subject to less systematic biases (Saucier & Miller, 2003). Disguised measures of verbal nature such as the error-choice and plausibility techniques, were proposed by Hammond, Waly and Cook, in 1948 and 1965, respectively. These two measures were based on the assumption that, when the purpose of the instrument is not apparent, respondents are less likely to distort or falsify their answers to attitudinal inquiries. Physiological reactions such as galvanic skin response, heart rate, palmar sweat, etc., were assumed to be checked against bias, for they were assessed

involuntarily, that is to say, the respondent has little control or no control at all (Jones & Sigall, 1971).

A second credible explanation to account for the observed, reported inconsistencies in attitude-behaviour relationship is of a long-standing concern, that is, "*multidimensionality*" of attitudes (Ajzen & Fishbein, 2005, p. 176). Most attitude measurement techniques resulted in a single score representing the respondent's overall positive or negative reaction to the attitude object. Allport (1935) believed that the focus on a single score, evaluative dimension did not justice to the complexity of the attitude construct. At Wicker's review time, the attitude concept incorporated the ancient trilogy of thinking, feeling, and doing. Whereas, in contemporary language, attitude is defined as a complex, multidimensional construct made of cognitive, affective, and conative components (Rosenberg & Hovland, 1960). Therefore, investigators believe that, in order to predict behaviour, they would have to assess the conative or purposeful action rather than the affective component (Katz & Stotland, 1959; Kothandapani, 1971; Ostrom, 1969; Triandis, 1964; Fishbein & Ajzen, 1975; Ajzen & Fishbein, 2005). Kothandapani (1971) findings, in his study of attitudes towards birth control, in the US, showed, however, high correlation between respondents' measured attitudes (cognitive, affective, and conative) and their use of contraceptives (median $r = .68$).

A third more plausible explanation is connected to the respondent's vested interest (the effect of involvement) in the attitude object and his or her (direct or indirect) experience with it (Kothandapani, 1971). These individual differences were considered as "*moderating explanation variables*" (Ajzen & Fishbein, 2005, p.

178). Sivacek and Crano (1982) operationalised vested interest, in one of their studies, in terms of the extent to which a prerequisite exam for graduation would affect college students personally. College students completed a scale designed to assess their attitudes towards instituting a prerequisite comprehensive exam at their university for graduation. The behaviour recorded was whether or not students signed a petition opposing the suggested examination, whether or not they volunteered to help distribute petitions, write letters to newspapers, etc., and the number of hours of help they pledged. The correlations between attitudes and single behaviours (actions) ranged from .24 to .42 for participants who fell in the lowest third of vested interest distribution, and from .60 to .74 for participants in the highest third.

In regard to direct experience, attitudes based on direct experience are, consequently, more predictive of subsequent behaviour than are attitudes based on second-hand information (Fazio & Zanna, 1981). Reagan and Fazio (1977), in one of a series of studies, examined the relationship between attitudes and behaviour with respect to five types of intellectual puzzles. In the direct experience condition, participants were given the chance to work on puzzles. In the second-hand information condition, participants were given description of each puzzle type and were shown previously solved examples of the same puzzles. The expressed interest in the puzzle served the measured attitude, and behaviour (order and proportion of each puzzle type attempted) was assessed during a 15minutes free play time. Correlations between attitudes and the two measures of behaviour were .22 to .20 in the second-hand information condition and .51 to .54 in the direct experience condition. They concluded that moderating variables would provide information about the processes whereby attitudes guide behaviour.

By and large, many investigators maintain their interest in broad attitudinal dispositions and their possible effects on behaviour and specific behaviour. Furthermore, the attitude construct is often used by investigators in different disciplines such as economy (marketing), politics (voting), and language learning, in particular second or foreign language.

3. Attitudes in Language Learning

Not surprisingly, language learning theorists and applied researchers have too often used the attitude construct as an affective subvariable in their studies to account for motivation among successful and unsuccessful language learning. Over the years, many interesting questions have been raised in the literature concerning the contributions of motivation, beliefs, and attitudes to second language achievement and proficiency (Gardner, 1985; Gardner & Lambert, 1959, 1972; Gan, Humphreys, & Hamp-Lyons, 2004; Ames, 1986; McCombs, 1990; Mantle-Bromley, 1995; Wenden, 1991; Savignon, 1997; Noels, Pelletier, Clément, & Vallerand, 2000; Savignon & Wang, 2003; Zimbardo & Leippe, 1991, Gan, 2004, Belmecheri & Hummel, 1998, Masgoret & Gardner, 2003; Mori, 1999; Benson & Lor, 1999).

Ames (1986) proposed that researchers should examine the effectiveness of learners in relation to those beliefs and perceptions that enable them to become involved, independent, and confident in their own learning. McCombs (1990) suggested that both attitudes and beliefs about the self and the learning environment can influence students' tendency to approach, expend effort in, and persist in learning tasks. Therefore, such an underlying principle places language learners' attitudes at the core of their language learning process, for it supposes

that students' attitudes condition language learning behaviour. Savignon (1997), believing in the importance of investigating learners' views and beliefs about using a foreign language, asserted that:

> "*if all the variables in L2 acquisition could be identified and the many intricate patterns of interaction between learner and learner context described, ultimate success to use a second language most likely would be seen to depend on the attitude of the learner*" (p. 107).

Benson and Lor (1999) attracted more attention to learners' conceptions of language learning process which can influence the way they actually approach the language learning tasks. Moreover, they (1999) argued for a relationship between learners' qualitative conceptions and their readiness for autonomy. Stated another way, a qualitative conception of language learning is likely to dispose learners towards language learning. Noels, Clément, and Pelletier (1999) reported, in one of their studies, that:

> "*This self-determination paradigm is also useful for understanding L2 motivation, because it suggets a process by which motivational orientations may change and a role that teachers can play to facilitate such change. Students are expected to become more more intrinsically motivated when they develop their competence through self-regulated efforts*" (p. 31).

Their study examined the link between these variables and various language learning outcomes, including effort, anxiety, and language competence. Their correlational analyses determined that stronger feelings of intrinsic motivation were related to positive language learning outcomes, including greater

motivational intensity, greater self-evaluations of competence, and a reduction in anxiety. Noels (2001), in one of his studies, reported that "*the more controlling the teacher was perceived to be, the less the students felt they were autonomous agents in the learning process, and the lower was students' intrinsic motivation*" (p. 107).

Therefore, it is not surprising that researchers, in recent years, have focused on students' beliefs about the nature of language learning and the efficacy of the strategies they use (Abraham & Vann, 1987; Cotterall, 1995; Horwitz, 1987). In the model suggested by Abraham and Vann (1987), learners' beliefs guide their approach to specific learning contexts, and the approach is manifested in observable or unobservable strategies, which influence the degree of success in language learning. Belmecheri and Hummel (1998), in their study aiming at understanding orientations and motivation in the acquisition of English as a second language among high school students in Quebec, assumed that "*the prediction of motivation by orientations may be about 2/5 (40%) and that the rest of the variance in motivation can be explained by other motivational components (e.g., attitudes)*" (p. 239).

One avenue of research on the role of attitudes and motivation in second language acquisition is that of R. C. Gardner and his associates (Gardner, 1985; Gardner & Lambert, 1972; Gardner & Smythe, 1981; Gardner, 2000). In his influential definition of language learning motivation, Gardner (1985) stated that motivation is "*the combination of effort plus desire to achieve the goal of learning the language plus favourable attitudes toward learning*" (p. 10). Gardner conducted a great number of studies on attitudes and motivation aiming at understanding their role within second language acquisition achievement. In his proposed socio-educational model of second language acquisition, Gardner drew many of his

assumptions upon the two concepts, attitude and motivation, and made often use of the Attitude/Motivation Battery (AMTB) to measure the major components of the model. The AMTB is comprised of 11 subsets, 9 of which involve assessments of attitudinal (5 subsets) and motivational variables (4 subsets) associated with second language learning. Attitudinal subsets are: a) attitudes towards the learning situation; b) evaluation of the course; c); evaluation of the teacher d) attitudes towards the target language group; and e) attitudes towards learning the target language. Additionally, in his suggested model, Gardner, distinguished between two classes of attitudes, integrativeness and attitudes towards the learning situation, and a third component, motivation. Gardner's model proposed that:

> *"integrativeness and attitudes towards the learning situation are two correlated variables that support the individual's motivation to learn a second language, but that motivation is responsible for achievement in the second language"* (Masgoret & Gardner, 2003, p. 169).

Masgoret and Gardner, in a meta-analysis of studies conducted by Gardner and his associates, used 75 independent samples involving 10489 individuals to estimate the magnitude of the contributions that motivation and attitudes make to achievement in second language. Masgoret and Gardner (2003) supported the hypothesis that:

> *"The relationship of second language achievement to measures of attitudes, motivation, and orientations are consistently positive, and the correlation of motivation with achievement in the language is higher than for the other measures"* (p. 177).

The mean corrected correlations of grades with both classes of attitudes were .24 for attitudes towards the learning situation, .24 for integrativeness, and .37 for motivation. Relatively, on the basis of such empirical evidence, the obtained results provide a somehow substantial support (because of the large sample) for their hypothesis.

Gan, Humphreys, and Hamp-Lyons (2004), in a conducted qualitative study intending to understand successful and unsuccessful English language learners in Chinese universities, showed that there are similarities and differences between the successful and unsuccessful learners in terms of how they may conceptualise the process of language learning. Their data suggested apparent differences in attitudes towards the CEC (College English Course) between the successful and unsuccessful Chinese students. The study findings suggest that "*levels of success may be explained by a complex and dynamic interplay of internal cognition and emotion, external incentives, and social context*" (Gan et al., 2004, p. 229). In the same vein, Mori (1999), in a study that examined the structure of language learners' beliefs about learning in general, specific beliefs about language learning, and the relationship between the two belief domains, emphasised the need to guide learners to be thoughtful, independent, strategic language learners. Mori stated that "*Thoughtful, independent learning means that students must be responsible for their own learning and be aware of the nature of learning in general and the nature of specific subject matter*" (p. 407). Mori's study has showed that language learners' beliefs are modestly, but statistically significant relating to achievement.

In Wenden's view (1991), attitudes that are crucial to learners' autonomy are those relating to students' evaluations of their own role in learning and their

learning abilities. Wenden (1991), relating learners' success in language learning to their autonomy, reported that:

> *"In effect, 'successful' or 'expert' or 'intelligent' learners have learned how to learn. They have acquired the learning strategies, and the attitudes that enable them to use these skills and knowledge confidently, flexibly, appropriately and independently of a teacher. Therefore, they are autonomous"* (p. 15).

Horwitz (1987) argued that a large amount of learners' language learning goes on outside of the classroom and that how students adjust this aspect of learning is crucial to their success as language learners.

It is thus not surprising that many investigators have conducted studies aiming at identifying various dimensions of the construct underlying learners' readiness for autonomy. Cotterall (1995) used factor analysis to identify a six-dimensional construct underlying learners' self-directed (managed) learning: a) the role of the teacher; b) the role of feedback; c) learner's independence; d) learner's confidence in his or her ability to learn; e) experience of language learning; and f) approach to studying. Broady's study (1996) made available shot on learners' attitudes towards exercising self-direction in learning among a group of first-year students studying French, using a questionnaire based on a 5-point Likert scale to stimulate reflection on curriculum development. Her results suggested that different types of individuals can have different distinct sets of attitudes towards self-directed language learning. Researchers (Larsen-Freeman, 2001; Wenden, 1991) have suggested that there is a relationship between attitudes and learning outcomes. Nevertheless, how self-directed learning attitudes are specifically related to different levels of success in language learning is still unidentified. Benson (2001)

called for the need of empirical research evidence to demonstarte the link between autonomy and effective language learning. Gan (2004), in a cross sectional study conducted on 357 second-year university students at two mid-eastern universities in China, examined self-directed language learning attitudes and strategies that may be characteristic of Chinese EFL students in relation to language proficiency. The obtained results revealed that attitudes towards self-directed learning are closely associated with all the self-directed language learning (SDLL) strategy components. However, "*attitudes towards SDLL do not seem to have a strong direct effect on proficiency*" (Gan, 2004, p. 389).

As a conclusion, we believe that eventual investigations of the relationship between learners' attitudes towards autonomy in language learning, the development of language proficiency, and language learning achievement will help us better understand the association between autonomy and effective language learning.

4. Attitudes as a Plethora of Concepts

Attitude researches embody a plethora of concepts and approaches that have been described amusingly by Kelley (1989, p. xx) as "*a circus tent over diverse side shows*". As seen in previous sections, certain notions go all along with the concept of attitude: a) affect; b) behaviour; and c) cognition.

4.1. Affect

As a relatively new concept in psychology, affect has been assigned a number of quite distinct definitions. Commonly, affects have been defined as evaluations or appraisals of objects, persons, or events as good or bad, favourable or

unfavourable, likeable or unlikeable. One more definition of affects is that they are emotional states, all sharing a common set of pleasant or unpleasant qualities (Clore & Schnall, 2005, Kruglanski & Stroebe; 2005).

Assuming one definition would yield specific theoretical and empirical implications. On the one hand, to assume affect as an evaluation or appraisal of an object, attitudes, as conceptualised by some theorists (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 2005), will be equated with affect. On this basis, it will be, absolutely, irrelevant to deal with the interplay between attitudes and affect, for they appear to be the same. Obviously, one thing cannot be the origin and the end product of itself. On the other hand, one should note that emotional researchers have emphasised that the distinction between conscious and unconscious affects is not to trivialise. Unconscious affect is, merely, reflected in the works of Zajonc (1980), in the *mere exposure* paradigm. It suggests that an individual's repeated exposures to a stimulus object would lead him or her to form more favourable attitudes towards that stimulus object. Unconscious affect, as having been suggested by other researchers in the field, is an emotional state that, either pleasant or unpleasant, is typically viewed as a feeling, implying a *conscious experience* (Schimmack & Crites, 2005).

Different types of affects have distinct causes and consequences. Diverse types of affects (emotions, moods, and sensory experiences), undergone by individuals, differ in a number of dimensions such as intensity, duration, object-directedness, and the awareness of the cause of the affective experience. Moods appear to be dissimilar from emotions in that they have no object, whereas emotions appear to be object-directed (Schimmack & Crites, 2005). Sensory

experiences are, in fact, affective states "*elicited by sensations such as touch, taste, smell, sound, and vision*" (Schimmack & Crites, 2005, p. 401).

Henceforth, for our present research purpose, we will view affects as conscious emotional states that are object-directed and elicited by the appraisal of events for an individual's well being, goals, and interests.

A foreign language learner may experience positive emotions and feelings while handling a language learning task (e.g. pronunciation training to speak RP English). While dealing with another task (e.g. identifying the theoretical implications of the study of stress in phonology), the same language learner may experience feelings and emotions that are coloured by diffidence and boredom. Therefore, pronunciation training task appears to be stimulating, leading, most likely, this learner to form a more favourable attitude towards pronunciation training activities. However, the second task appears to be deterring, evoking unpleasant emotions that would lead this foreign language learner of English to form unfavourable attitude towards working on such theoretical issues.

Considerably, attitudes appear to be based on affective experiences, pleasant or unpleasant, intense or mild, and that emotions are more likely to have enduring effects upon attitudes. The latter, in turn, appears to be a significant agent in shaping the actual and potential behaviours of the individual.

4.2. Behaviour

Commonly, behaviour takes two forms: implicit (covert), unobservable and explicit (overt), observable responses (Anderson, 1981). A covert response is a mental reaction or evaluation (judgement or appraisal) that the individual

undergoes with regard to a stimulus object. An explicit response is the rendition of that implicit response to an observable, patently distinguished act in regard to the stimulus object. Our focus, in this respect, will be upon the second form of behaviour.

As Jaccard and Blanton (2005) put it, behaviour is

> "*any denotable overt action that an individual, a group of people, or some living systems (e.g., a business, a town, a nation) performs. An action has a denotable beginning and a denotable ending and is performed in an environmental context in which the individual or group is embedded*" (p. 128).

Moreover, researchers have argued that various behaviours have four core elements: a) action, b) an object or target (i.e. a goal) towards which the action is directed, c) a setting, and d) a time (Jaccard & Blanton, 2005; Ajzen & Fishbein, 2005).

Undoubtedly, the behaviour of the individual as well as the prediction of his or her behaviour are of central interest in attitude and major psychological researches, for human beings are viewed as "*active agents, who know what they are doing in most situations and are making conscious decisions with regard to their actions*" (Keeves, 1988, p. 17).

Following the line of the previous examples respectively, the foreign language learner of English, holding a hypothetical favourable attitude towards pronunciation training tasks, may opt for trying hard to shape his or her articulators so as to fit neatly to produce English sounds in a native-like manner. When handling the second task, this foreign learner of English, with a

conjectural unfavourable attitude towards theoretical issues in learning, may opt for not working on it, or will leave it unsolved. Drawing mainly on the two hypothetical attitudes, these two different actions reflect, in point of fact, the extent to which the learner is motivated to handle the two different tasks and arrive at solving them. Therefore, the learner's behaviours and goals involve volitional control. Nevertheless, behaviours tend to fall "*toward the volitional end of the continuum, whereas goals fall toward the nonvolitional end*" (Ajzen & Fishbein, 2005, p. 192). This very issue is, extensively, investigated in the literature of motivation in language learning, more specifically second or foreign language learning (Noels et al., 2000).

Learning has been viewed, by many contemporary psychologists, as an active process in which the learner infers principles and rules and tests them, and "*is not simply something that happens to individuals, as in the operant conditioning model, but something which they themselves make happen*" (Fontana, 1995, p. 145). Significantly, it is worth noting that an ad hoc implication of volitional control over behaviour and goals of behaviour will be of greatest importance for our present research. Success or significant level of achievement, within a language learning context, more particularly second or foreign language learning, is determined by a number of interrelated factors of which the learner's deliberate efforts (that is to say, behaviours) are crucial. Inasmuch as the learner's deliberate efforts are incontestably decisive to succeed in language learning, we believe that self-managing the learning process and assuming more responsibility over it would contribute, positively, to more goal attainment (Zimmerman et al., 1996).

4.3. Cognition

Defined by Matlin (2003) as "*mental activity,* [which] *describes the acquisition, storage, transformation, and use of knowledge*" (p. 3), cognitive systems are basic to represent attitudes (evaluations) in memory: how belief-relevant knowledge is organised, represented in memory, and the processes that trigger its use and retrieval.

Associative network is the commonest metaphor used for attitude representation, that is,

> "*an attitude is a two-node semantic network, with one node representing the object, the second node representing the global evaluation of the object, and the link between the two nodes the strength of the association*" (Fabrigar et al., 2005, p. 80).

However, some knowledge structure, associated with the attitude object, may be in conflict with the evaluation, when taken as a whole, thus, creating *ambivalence* (Fabrigar et al., 2005). Instead, the *Parallel Distributed Processing* (connectionist) metaphor came to be used, by numerous psychologists, to argue that cognitive representation of the attitude is *stored* in the connection weights among units that are neuron-like units (Matlin, 2003). When the attitude object is encountered, or thought about, activation flows through networks that link together a large number of simple, neuron-like units, and these weights determine the amount of activation. Irrespectively, attitudes can be conceptualised within either metaphor devoid of much conceptual cost (Wegener & Carlston, 2005; Matlin, 2003).

Consistent with our commitment in regard to this issue, we assume that attitudes as evaluations can vary in stability, that is, storage, use, and retrieval in an individual's memory. In addition, we use the term cognition, in relation to our research field, to be associated with beliefs (generally, but not exclusively) that an individual holds about the attitude object. These beliefs pertain to knowledge about the self, significant others, objects, situations, and events. It can also concern the relationship among these entities. This knowledge is oftentimes acquired or learned through direct experience with its referents, and can be generated internally. In other words, it can be the result of having performed a number of cognitive operations upon pieces of information an individual has already acquired or learned.

Beliefs can be conceptualised as estimates of the probability that the knowledge an individual has acquired or learned about a proposition (referent) is true or that, alternatively, an event or state of affairs will happen. The beliefs an individual holds pertain to knowledge and are not necessarily part of knowledge, for they are required only to achieve a goal to which they are relevant (e.g. to make a behavioural decision).

For instance, learners could often be certain about how well they actually performed on a given test, or they could be, too, certain of whether the grades they would have would be the same obtained previously. Likewise, a number of learners could feel confident about their abilities to take responsibility over their learning process, but feel relatively unassertive about attaining all their learning goals merely on their own. Some can be assertive about the importance of good tutoring to help them achieve much of their goals. Other learners can be very

assertive about the effectiveness of the use of diverse learning strategies; however, the others can be less assertive.

Taken as a whole, beliefs are related to a number of relevant information (about the self, significant others, places, objects, events, and situations) that are organised in memory and actually considered when computing these beliefs.

5. Theories of Attitudes

As having been stated earlier, research in social psychology takes, for the greatest part, on the study of attitudes. Notwithstanding, there is a surprising lack of consensus among social psychologists about the fundamental nature of attitude. This fact evidences the numerous, divergent approaches offered by specialists in the field to concentrate upon the focal point of attitude. Three major theories are nonetheless recognised by researchers: a) the *Tripartite* Theory; b) the *Separate Entities* Theory; and c) the *Latent Process* Theory (Oskamp & Schultz, 2005).

5.1. The Tripartite Theory

It is the traditional theory that is labelled also as the *tri-componential* theory. It holds that an attitude is a single entity, comprising three components: a) affective; b) behavioural; and c) cognitive. These three parts constitute the ABCs of attitudes. Central to this theory is the high degree of consistency between the three components. To put it another way, the three components are highly correlated.

Whatever may be the correlation between the three components, we can still argue that if, on the face of the scant evidence, there is little or no consistency

between the three components, there will be reason to believe that they are utterly independent entities. Therefore, there will be ground to consider the three components as aspects of different concepts. After a survey of the literature, McGuire (1969) concluded that the three components have proved to be highly inter-correlated, and reported that "*theorists who insist on distinguishing them* [the three components] *should bear the burden of proving that the distinction is worthwhile*" (p. 157). However, it is most likely to suggest with significantly an evidenced assurance that some attitudes prove to have not the three distinct components. Individuals happen to develop attitudes towards certain behaviours (e.g. an Algerian person, who knows both American and British English, addressing an American tourist in British English), drawing mainly from norm perceptions and subjective beliefs without having ever experienced the behaviour at all. Zajonc (1980) suggested that emotional reactions to certain specific objects do not have any cognitive knowledge base, e.g. fear from spiders.

Notwithstanding, the tri-componential view of attitude seems to stand as a strong formal model.

5.2. The Separate Entities Theory

This view holds that the three components of the attitude, we described above, are separate entities that may or may not be related. Fishbein and Ajzen (1975) are among the advocators of this view, who insisted on reserving the term attitude for the affective component, which indicates solely the degree of favourability or unfavourability (generating like or dislike) towards an object.

Moreover, they referred to the cognitive component as the *belief*, and is conceptualised as a subjective probability estimate that is computed at a given time it becomes necessary to attain an objective, or a goal to which it is relevant (Wyer & Albarracín, 2005). Simply stated, a belief is an individual's subjective probability that an object has a particular characteristic. For instance, a learner of English language is likely to think that 'listening to tapes for comprehension is very important to learn the language'.

The behavioural component, dealing with the conative aspect referred to, by Fishbein and Ajzen, as *behavioural intention*, is conceptualised as the individual's subjective probability that this individual will perform a particular behaviour towards the attitude object, for example, 'I am going to buy Edgar Allen Poe's story teller'. Noteworthy, within this conceptualisation of attitude, beliefs and behavioural intentions could be theoretically defined as determinants of the attitude towards an object, but are not themselves the attitude.

It was pointed out, further, by Fishbein and Ajzen that an individual may usually have different beliefs about the same object, idea (e.g. learning on one's own), event, or situation and that these beliefs may not be necessarily related. Eagly and Chaiken (1993) highlighted the decline in attitudinal stability, pointed out that expressed attitudes may not be stable "*because the relative accessibility of the favourable and unfavourable attributes ascribed to an attitude object would affect the attitude expressed at any one point in time*" (p. 127). If a language learner, for instance, believes that what he or she does outside the classroom (managing his or her learning efforts) is essential to have a good grade in English, this person may or may not believe that, in order to be a successful language learner, it is

very essential for him or her to organise and carry out (self-manage) his or her own learning. This language learner may, too, believe that the best way to learn English successfully is mainly in the classroom from a good teacher.

Broady's (1996) research on learners' attitudes towards self-directedness among a group of first-year university students studying French maintained this underlying principle. She noted that while her respondents might recognise learner responsibility and be open to the idea of independent work, at the same time they seemed to hold beliefs that might limit their capacity for exercising self-direction. The same situation holds true for the individual's behavioural intention. 'I intend to buy Edgar Allen Poe's story teller' does not imply 'I am going to buy it' nor 'I am going to listen to it attentively'. On the contrary, Fishbein and Ajzen argued that all measures of an individual's affect towards a particular object should be highly correlated. For instance, 'I like studying on my own' does imply 'I like selecting English materials for self-study', or 'I like listening to English tapes'. Alternatively, 'I do not like studying on my own' does imply 'I do not like selecting English materials for self-study', or 'I do not like making summaries of my courses'.

The conflicting findings that were reported in Wicker's (1969) review of the literature give support to the separate entities view, holding the fact that, there are not actually inconsistencies in the attitude-behaviour relation (Oskamp & Schultz, 2005; Ajzen & Fishbein, 2005). Therefore, the separate entities view does not entail a required connection among the three components, but rather allows for a strong relationship under certain conditions (Fishbein and Ajzen, 1975).

5.3. The Latent Process Theory

Emphasising certain different aspects, the latent process viewpoint postulates that attitude is a hidden process occurring within the individual, and is used as an explanation of the relationship between the stimulus events and the individual's responses (affective, behavioural, or cognitive). McGuire (1985) defined attitude as "*a mediating process grouping a set of objects of thought in a conceptual category that evokes a significant pattern of responses*" (p. 239). According to this conceptualisation, the attitude is a non-observable *intervening variable* that mediates or helps to explain the connection between certain observable stimulus events (the environmental situation) and certain behavioural responses.

For instance, the concept that a learner has a favourable attitude towards studying English on his or her own can help explain his or her spending time improving his or her writing style even if he or she is not required to do so. Similarly, a learner's attitude towards initiative in learning can lend a hand to explain why he or she previews lessons independently, or keeps working until he or she finishes the task at hand even when study materials are tedious.

This view assumes that stimulus events can arouse an individual's affective, behavioural, or cognitive processes, many of which are non-observable. These processes jointly or independently can produce an attitude towards objects involved in the stimulus situation, and this attitude is a non-observable or latent construct. However, the presence of an attitude will give rise to, and can be measured of, observable responses.

Surely enough, attitudes, as inferred constructs, is a point that is agreed upon by almost all theorists. Bearing this in mind, and considering some reasons

directly related to the present research (this will be made clear in the next chapters), our commitment will be to the view of attitudes as latent constructs. The latter has several advantages over the two prior theories. On the one hand, it does not equate attitude solely with affective or emotional states, thus excluding cognitions or behaviours as elementary parts of the attitude concept (Albarracín et al., 2005). On the other hand, it does not assume any hypothetical, moderate or strong, degree of reciprocal relationship between the three afore-mentioned concepts. Alternatively, it elucidates that attitude may manifest in affective, behavioural, or cognitive responses (Zanna & Rempel, 1988; Eagly & Chaiken, 1993).

Chapter 2

COGNITION AND STRATEGIES IN LANGUAGE LEARNING

1. Cognitive Approaches to Language Learning

A large number of conducted studies accounting for the process of language learning, including second or foreign language, have been, to a significant extent, linguistically-based (Lyons, 1981; Cook, 1993; DeKeyser & Juffs, 2005). That is, language is represented, acquired, or learned by the human mind in ways that are quite distinct from any other kind of knowledge, thus supporting the view of the modularity of the human brain. The distinctive use of both terms '*acquisition*' and '*learning*' reflects, too, this conceptualisation: the term 'acquisition' being used strictly to refer to the process through which an individual gains control over his or her mother tongue ; and 'learning' being used to refer to the processes through which an individual achieves control over another language.

Language is learned separately from other cognitive skills, operating according to separate underlying principles from almost all other learned behaviours. This postulation is represented within some analyses of exclusive properties of language, such as developmental language order, grammar, social and environmental influences on language use, and the differentiation and demarcation between language *acquisition* and second or foreign language *learning* processes. Therefore, language and linguistics interact with cognition, however, they maintain a separate identity that would give good reason for single investigation from other cognitive processes.

Alternatively, many other researches have made opposite assumptions, and have argued that language can be accommodated in a wider framework of how people perceive, store, acquire, and retrieve knowledge in general rather than being viewed as something exceptional and peculiar on its own. Any singular

status for language and what can be claimed to constitute knowledge of language are, therefore, denied (Anderson, 1983; O'Malley & Chamot, 1990; Oxford, 1990; Hsiao & Oxford, 2002; Cohen, 1998).

Within the cognitive perspective, the mechanisms of the mind are at the core stage of learning, including language learning. As opposed to behaviourism that treated "*the mind as a black box not to be examined or included in the explanatory scheme of stimuli and response reactions*" (Johansson & Gärdenfors, 2005, p. 7), the mind (in the broadest sense) is viewed as a device for information processing, with the computer as the basic metaphor. The information is processed and represented by symbols, and it is these symbols that are the carriers of the cognition taking place between perceptual stimuli and behavioural responses. Following the computer metaphor, cognition is executed by consecutively operating on symbols in the working memory in accordance with rules stored in long-term memory, therefore mimicking the central processing unit of a computer.

For theoretical and empirical implications in our research, our commitment will be to the view of language as a cognitive skill, as argued by Anderson (1983), "*the language faculty is really the whole cognitive system*" (p. 3). The evidence, accounting for this postulation, is the "*remarkable communalities between language and other skills*" (Anderson, 1983, p. 3). Likewise, as Lyons (1981) stated, we believe that:

> "*any success that we have in the simulation of language-processing by computer, on the basis of what psychology can tell us about memory, perceptual strategies, reaction times, etc., and what linguists can say about linguistic structure, is bound to increase our understanding of language and mind*" (p. 264).

Therefore, the simulation of language-processing by computer will, most likely, lead us to make explicit the process of how a learner learns a language, on the one hand, and, on the other hand, viewing the language as a cognitive skill would, undoubtedly, account for successes and failures of language learners in learning a second or foreign language.

Needless to say that a sound understanding of memory will, certainly, explain some principles that underlie language learning (incorporating second or foreign language learning), for, as argued by Sprenger (1999), "*the only evidence we have of learning is memory*" (p. 46).

We shall, subsequently, present three major points: a) an information-processing system (IPS); b) memory; and c) learning a language (as a cognitive skill). Following the lines of the previous reasoning, we believe that one way to understand human learning (e.g. language learning) is to understand the information-processing system (IPS). However, any information-processing model draws, certainly, much on memory. For that purpose, we rely on the works of Baddeley (1992) and Sprenger (1999) to represent our model.

Here, we present our information-processing model:

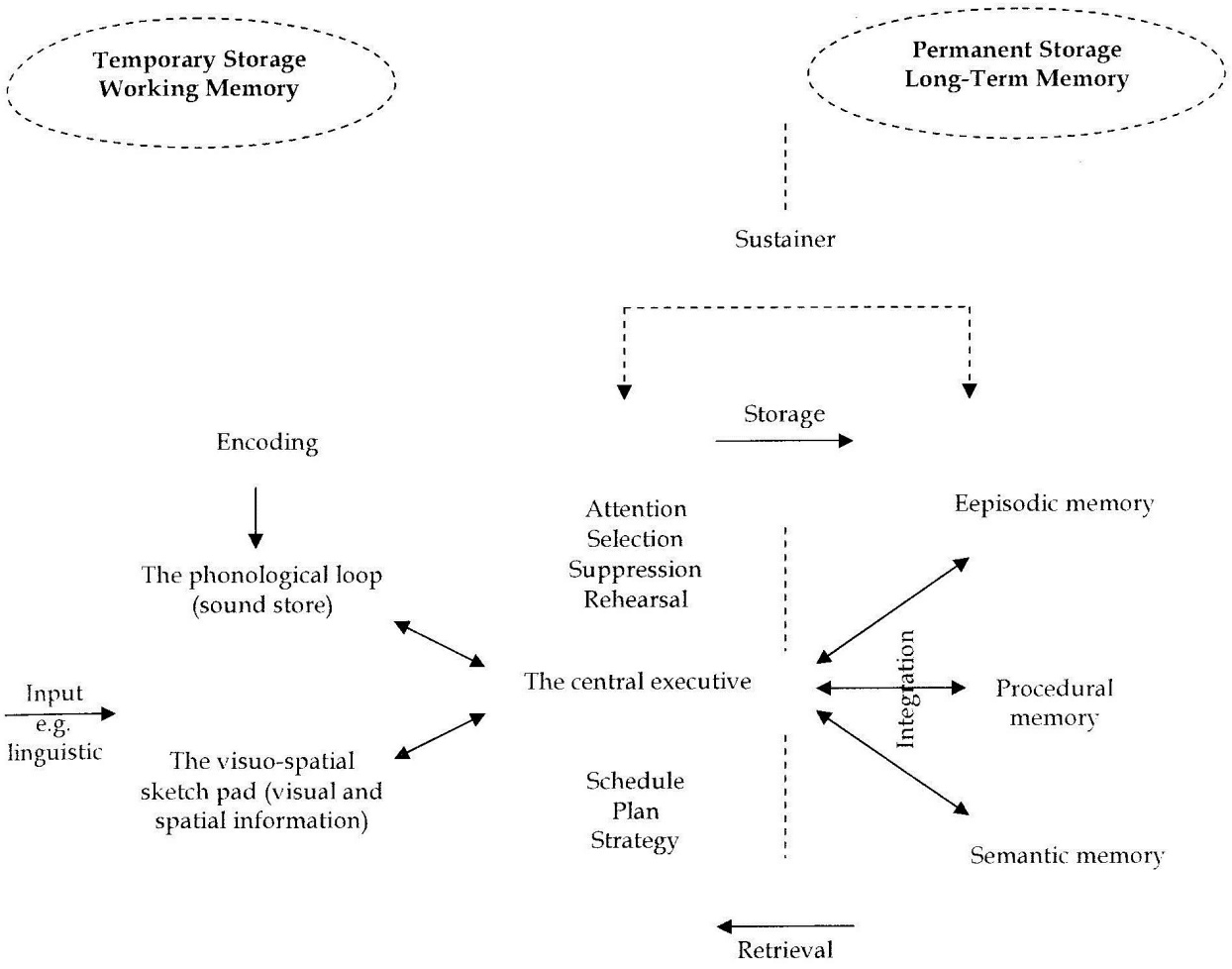

Fig. 1 A model of information-processing system (IPS).
Based on the works of Baddeley (1992) and Sprenger (1999).

The basic assumptions of the information-processing model are that information is encoded, stored, and retrieved; and that we have separate storage areas for various memories: a) temporary memory area, including the *phonological loop*, the *visuo-spatial sketch pad*, and the *central executive*); and b) permanent storage memory area, including the *episodic memory*, the *procedural memory*, and the *semantic memory*. Importantly, it will be very useful, though briefly, to make explicit (but brief) definitions of a number of cognitive processes that are frequently dealt with in

relation to memory and the information-processing system: a) encoding; b) storage; and c) retrieval.

Although the term 'process' is used extensively by most psychologists, it remains undefined by almost all psychological dictionaries, including the *Blackwell Dictionary of Cognitive Psychology*. Therefore, for our present research, we shall consider Wegener and Carlston's (2005) definition: "*A cognitive process involves one or more recurrent mental events that, in concert, add to, alter, or act upon representations in memory with detectable consequences*" (p. 465). *Encoding* is the process used to convert (transform) information in a specific way before it is stored, for information is not stored the way it is presented. When a learner listens, for instance, to a story-teller, he or she derives meaning from the words heard and stores them (meanings) rather than storing the whole words of the story. It is worth to point out that, within an information-processing model, encoding is used in a too mechanistic convention, referring to only converting any stimulus object to a mental representation, irrespective of any semantic consideration. *Storage* refers to the process of placing information, temporarily or permanently, into memory. *Retrieval* refers to the process of locating and accessing formerly stored information. It is, sometimes, effortless to recall a given piece of information; other times, however, it takes considerable thought and effort.

1.1. Temporary Storage of Information

Working memory, described as being the *centre of consciousness* in the IPS, is the active part of the memory system that gives us the ability to form long-term memories (Baddeley, 1992; Sprenger, 1999). As shown in Fig. 1, the flow of information begins with the input from the environmental stimuli, for instance,

a linguistic input. A learner can form (encode) a mental image of a written word in a book, on board, etc., and how it is written (the shape of the letters, e.g. capitals) in the visuo-spatial sketch pad, which is a storage device that stores visual and spatial information, including visual information encoded from verbal or acoustic stimuli. Or, the learner can encode an acoustic image of the word via auditory perception of the sequence of sounds of the word. These pieces of information are temporarily stored in memory, but are not, still, stored permanently. Noteworthy, the working memory is limited in capacity and duration (Sprenger, 1999).

Within our proposed model of information-processing system, the *central executive* that integrates information from the phonological loop and the visuo-spatial sketch pad, as well as from long-term memory, has a major role in attending to, selecting, and suppressing information, as well as elaborating, scheduling, storing information in long-term memory, and coordinating behaviour. Eggen and Kauchak (1997) argued similarly that three major events take place when input material gets into the working memory: a) quick lost of the information; b) retaining of the information, in the working memory, for a brief period of time by repetition; and c) transferring the information into long-term memory by the use of *specific learning strategies* (e.g. rehearsing). Learners of a second or foreign language often used to repeat words by saying or writing them repeatedly in order to place them in long-term memory.

It has been consistently shown that many of the stimuli learners experience never get neither into their working memory nor into their long-term memory, for they do not attend to the stimuli. Therefore, if learners do not attend to

information, there will be little concern about retention or retrieval, for no information would have been acquired. In a both quantitative and qualitative study that addressed the role of awareness and attention in relation to Schmidt's noticing hypothesis in second language acquisition, Leow (1997) suggested that:

> "*Different levels of awareness lead to differences in processing, more awareness contributes to more recognition and accurate written production of noticed forms, and findings provide empirical support for the facilitative effects of awareness on foreign language behaviour*" (p. 467).

Similarly, Hu (2003), in a study that examined the role of phonological memory awareness in foreign language word learning, pointed out that "*phonological memory and phonological awareness may support FL word learning, but phonological awareness may play a specific role when the words are relearned*" (p. 429).

In short, unless particular attempts are made to attend to and record information encoded in the working memory, much of the materials (e.g. linguistic material) presented in lectures and textbooks is not stored in memory, thus not learned.

1.2. Permanent Storage of Information

Long-term memory consists of information stored for an indefinite period of time that we possess, but are not, immediately, using. It has a large capacity and contains a memory of experiences that have been accumulated in a lifetime (Matlin, 2003). Information in long-term memory does not fade, nor is it lost, except, most likely, as an effect of senility or some other physical malfunction (Dembo, 2004). According to our proposed model of information-processing

system in Fig. 1, long-term memory is subdivided into: a) *episodic memory;* b) *procedural memory;* and c) *semantic memory.*

Episodic memory "*focuses on memories of events that happened to us; they describe episodes in our life*" (Matlin, 2003, p. 113). It is also referred to as "*contextual or spatial memory*" (Sprenger, 1999, p. 52), for we sometimes remember some information because it is related to a location (Sprenger, 1999). Language learners often remember linguistic pieces of information, for they are related to specific locations such as the board, page of a book, etc.

Procedural memory refers to our stored knowledge about how to do things. For instance, beginner language learners follow a number of steps when they construct sentences, by making associations between different linguistic elements as nouns, verbs, adjectives, and applying grammatical rules (Anderson, 1983). We will give more detail about this point in the section to come.

Semantic memory "*describes our organized knowledge about the world, including our knowledge about words and other nonpersonal information*" (Matlin, 2003, p. 113). It corresponds to what is largely known as declarative knowledge (knowledge about facts).

2. Language as a Cognitive Skill

As stated earlier, the learning process is conceived of, within the information-rocessing system, as completely mechanistic. However, cognitive psychology, hich takes into account semantic considerations in relation to learning, provides

vivid accounts of the process specifically language learning process. In this respect, Anderson's (1983) psychological work is a reference.

Anderson's (1983) model that relates to second or foreign language learning is, fully, presented in his *Active Control of Thought* model (ACT). The core concept of the ACT model is the production systems that are made up of production rules, which in turn, consist of conditional statements in the form: IF x is true, THEN do y, such as:

IF the goal is to put the verb in the simple present
Then set as subgoals
1. To describe the agent
2. To describe the end of the verb (if it ends with a sibilant, or with y)
3. To add: s, es, or ies.

Accordingly, such production rules are the basis for language production. Furthermore, such production rules reveal a dynamic view of language as productions that are not specifically linguistic.

Anderson's ACT model distinguished three forms of memory: a) *declarative memory;* b) *procedural memory;* and c) *working memory.* Declarative memory is a device for storing actual information in the form of propositions (it corresponds to the semantic memory presented in our proposed model of information-processing). Procedural memory consists of processes to check the parts of the rule against the declarative memory. The working memory is used for the actual performance of the production rule and calls for other two memories. In view of Anderson, procedural knowledge of language is not available to the learner's consciousness, includes methods of constructing sentences, and consists of grammatical morphemes. Whereas, declarative knowledge of language consists of

lexical morphemes that are consciously available to the language learner. In such a way, the use of a production rule in the working memory entails an interaction between procedural and declarative memories.

Viewing language as a skill, Anderson (1985) argued that "*It is typical to distinguish three stages in the development of a skill*" (p. 273). Therefore, when learning a language, for instance, the learner's mind shifts from declarative to procedural knowledge, according to three stages: a) *the cognitive stage* (called also the declarative stage) in which new pieces of information (linguistic input) are perceived as declarative facts. A foreign language learner starts to learn new production rules or systems with no pre-set procedures. In fact, foreign language learners, at their first steps to learn the target language, rely heavily on declarative knowledge, and "*develop a declarative encoding*" (Anderson, 1985, p. 273); b) *associative stage* (referred to as the knowledge compilation stage) in which connections among the various elements encoded before are strengthened to achieve more successful performance. At this stage, both declarative and procedural knowledge coexist side by side, i.e. procedural knowledge does not replace entirely the declarative knowledge (e.g. a foreign language learner may speak fluently; still, he or she remembers the grammatical rules). Noteworthy, Anderson (1985) argued that "*it is the procedural, not the declarative knowledge that governs the skilled performance*" (p. 274); and c) *autonomous stage* (called too the tuning productions stage) in which the procedures become more and more automated and fast. The procedural ability is, by this time, no longer available to the learner's consciousness, and generalisations of production rules are made with finer discrimination.

Important to our research is the output of the second stage, that is to say, *proceduralisation*, which is defined as "*the process by which people switch from explicit use of declarative knowledge to direct application of procedural knowledge*" (Anderson, 1985, p. 283). Moreover, these procedures, as argued by Anderson (1985), can be described by production rules, which, as viewed by O'Malley and Chamot (1990), "*are a set of productions that are compiled and fine-tuned until they become procedural knowledge*" (p. 43). This point has come to extensive investigations, and is best reflected in the works of learning strategies. A theme we shall discuss in the section to come.

3. Learning Strategies and Language Learning

It has been commonsense to attribute failure and success in learning a second or foreign language to learners' abilities. However, abilities are only a part of the answer to understanding how and why language learners differ in their performance (Sternberg & Grigorenko, 2001). However, Pimsleur, Mosberg, and Morrison (1962) reported that:

> "*verbal intelligence and motivation together account for perhaps 35% of the variance in FL achievement. This is as much as can be concluded with reasonable assurance from the evidence now at hand. Clearly, the greater part of the variance in FL achievement remains to be investigated*" (p. 169).

Generally, psychological researches have indicated that highly motivated, successful learners possess a number of characteristics that make them different from other learners: a) they possess self-efficacy; b) they have an internal control of locus (self-reliant), i.e. they believe that they have a significant control over the

outcome of their learning and that their success is not outwardly controlled by the teacher, or other factors; c) they are confident in their abilities ; d) they have positive attitudes towards learning, see the need for a better attainment, and e) desire self-direction or autonomy (Ehrman et al., 2003; Hedge, 2000).

Recent second or foreign language learning researches have called for more integrative research on individual differences factors. With this goal in mind, many quantitative and qualitative studies have been conducted to establish the links between self-directedness in language learning, language learning strategies, and language learning attainment (Gan et al., 2004; Gan, 2004; Wenden, 1991).

As Nyikos and Oxford (1993) put it: "*learning begins with the learner*" (p. 11). Such a shift in focus inherits obviously a shift in the responsibilities of both teachers and learners. The teacher acts no longer as the locus of instruction, nor does he or she control every aspect of the learning process. On the contrary,

> "*the learners themselves now, more than ever, are sharing the responsibility for successful language acquisition and, in doing so, are becoming less dependent on the language teacher for meeting their individual language learning needs*" (Cohen & Weaver, 1998, p. 7).

As a result, learners are becoming more autonomous and the learning process more self-directed. Such an underlying principle has deep roots in the attribution and self-efficacy theories in psychological literature (Bandura, 1997). Some learners' efforts and actions in pursuing learning tasks, in the face of obstacles and failures, are tied to their belief in their "*capabilities to organize and execute the courses of action required to produce given attainments*" (Bandura, 1997, p. 3). Moreover,

Bandura (1997), keeping a faith in the human agency, stated that "*If people believe they have no power to produce results, they will not attempt to make things happen*" (p. 3).

Such an awareness of the importance of the human agency has contributed a lot to what has become widely known as learning strategies, and their relationship with learners' various levels of proficiency and achievement. Furthermore, it has been commonly recognised that some learning strategies are effective, good, successful, and that some other learning strategies are neither effective nor good. Cohen and Weaver (1998) did argue that "*with some exception, the strategies themselves are not inherently good or bad, but have the potential to be used effectively*" (p. 2). They suggested that "*it is safest to refer to what often amounts to a panoply of potentially useful strategies, depending on the learner, the context, and the specific task*" (Cohen & Weaver, 1998, p. 2).

Stressing the importance of learning strategies for accessing and using knowledge, Dembo (2004) maintained that:

> "*Successful learners are not simply individuals who know more than others. They also have more effective and efficient learning strategies for accessing and using their knowledge, can motivate themselves, and can monitor and change their behaviors when learning does not occur*" (p. 4).

Similarly, applied to the field of language learning, Griffiths (2003) reported that "*The possibility that effective use of language learning strategies might contribute to successful language learning is exciting*" (p. 381), and that teachers might consider any potential benefits of instructing these strategies to language learners.

Learning strategies have been, extensively, investigated in the last three decades (O'Malley & Chamot, 1990; Oxford, 1990; Harris & Grenfell, 1998; Cohen, 1998; Griffiths, 2003; Ehrman et al., 2003; Gan, 2004). Nonetheless, a number of significant "*questions concerning how to enumerate and categorize these strategies remain*" (Hsiao & Oxford, 2002, p. 368), for they have generally been developed for research purposes. In this section, we shall attempt to clarify some of the conflicts that are, usually, encountered in the literature by considering the most, conventionally, accepted definitions of learning strategies and their classification by theorists in the field, and how they fit into the framework of contemporary teaching and learning of second or foreign languages.

3.1. The Concept of Learning Strategies

Rubin (1975), one of the earliest researchers in the field of language learning strategies, provided a very broad definition of learning strategies as "*the techniques or devices which a learner may use to acquire knowledge*" (p. 43). Weinstein and Mayer (1986) did define learning strategies as "*behaviors or thoughts that a learner engages in during learning that are intended to influence the learner's encoding process*" (p. 315). Oxford (1990) defined learning strategies as those "*operations employed by learners to aid the acquisition, storage, retrieval, and use of information*" (p. 8), and more particularly as "*specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations*" (Oxford, 1990, p. 8). O'Malley and Chamot (1990) defined strategies as "*special ways of processing information that enhance comprehension, learning, or retention of the information*" (p. 1).

It is worth to point out that learning strategies and styles are, often, seen as interrelated (Ehrman et al., 2003). However, both concepts have different theoretical foundations and encompass functional differences. Sternberg and Grigorenko (2001) argued that "*At a basic level styles and strategies can be distinguished by the 'degree of consciousnesses' involved. Styles operate without individual awareness, whereas strategies involve a conscious choice of alternatives*" (p. 3). Moreover, learning strategies are generally used for task- or context-dependent situations, whereas styles imply a substantially higher degree of stability. Ehrman et al. (2003) argued that "*Styles are made manifest by learning strategies (overt learning behaviours/actions)*" (p. 315). Cohen (1998), emphasising the notion of consciousness and the choice factor, asserted, too, that "*the element of consciousness is what distinguishes strategies from those processes that are not strategic*" (p. 4).

Applied to the field of second or foreign language learning, Scarcella and Oxford (1992) defined language learning strategies as "*specific actions, behaviors, steps, or techniques (such as seeking out conversation partners, or giving oneself encouragement to tackle a difficult language task) used by students to enhance their own learning*" (p. 63). Similarly, Cohen (1998) defined language learning strategies and language use strategies as

> "*those processes which are consciously selected by learners and which may result in action taken to enhance the learning or use of a second or foreign language through the storage, retention, recall, and application of information about the language*" (p. 4).

Particular to Cohen's definition of learning strategies is the differentiation between language learning strategies and language use strategies (this point will come into further discussion and clarification in the section to come).

In the light of these somewhat tangled concepts, definitions and arguments, we define the language learning strategy, for the purpose of our research, as including *specific, overt actions or behaviours that are consciously selected, opted for, and employed by the language learner for the purposes of language learning and academic achievement.* Therefore, our definition concerns what learners do in order to learn the language (achieve control over the target language), and achieve an academic success.

3.2. Classification of Language Learning Strategies

In spite of the preponderance of language learning strategies researches, thoroughly defining and classifying language learning strategies are no easy tasks, and remain controversial. O'Malley et al. (1985) claimed that "*there is considerable confusion about definitions of specific strategies and about the hierarchic relationship among strategies*" (p. 22). Likewise, Oxford (1990) argued that:

> "*there is no complete agreement on exactly what strategies are ; how many strategies exist ; how they should be defined, demarcated, and categorized ; and whether it is - or ever will be – possible to create a real, scientifically validated hierarchy of strategies..... Classification conflicts are inevitable*" (p. 49).

Classifying language learning strategies is not the only problem encountered in the field, but also how to identify and enumerate them, for few language learning strategies are directly observed, and most of them are inferred. As Ellis

(1986) put it nicely: "*It is a bit like trying to work out the classification system of a library when the only evidence to go on consists of the few books you have allowed to take out*" (p. 14). Therefore, language learning strategies are most of the time identified through self-report. The latter is likely to suffer from bias and inaccuracy, especially if the respondents (learners) do not report truthfully. Still, self-reports are the only way to identifying the mental processes that take place in the learners' minds. Grenfell and Harris (1999) did state that "*it is not easy to get inside the 'black box' of the human brain and find out what is going on there. We work with what we can get, which, despite the limitations, provides food for thought*" (p. 54). It is worth to point out, here, that one of the most used self-report tools for identifying language learning strategies is the one developed by Oxford (1990), the SILL (the Strategy Inventory for Language Learning).

When classifying language learning strategies, Rubin (1981), for instance, identified two kinds of learning strategies: a) those which contribute directly to learning; and b) those which contribute indirectly to learning. The direct learning strategies, Rubin provided, include six types: a) clarification and verification, b) monitoring, c) memorisation, d) guessing, i.e. inductive inferencing, e) deductive reasoning, and f) practice. The indirect learning strategies include two types: a) creating opportunities for practice, and b) production tricks.

Under production tricks, Rubin included communication strategies. The latter is a controversial inclusion since researchers as Brown (1980) and Cohen (1998) viewed learning strategies and communication strategies as two separate manifestations of language learner behaviour. Cohen (1998) referred to language learning strategies as strategies for "*identifying the material that needs to be learned*"

(p. 5), whereas he referred to language use strategies as those used, by the language learner, for calling up the material from storage, rehearsing target language structures, creating an appearance of language ability, and communication strategies that are intended to convey "*a message that is both meaningful and informative for the listener or reader*" (Cohen, 1998, p. 7). Brown (1980), in turn, drew a clear distinction between learning strategies and communication strategies on the grounds that "*communication is the output modality and learning is the input modality*" (p. 87) (for a review of communication strategies, see Dörney and Scott, 1997). Brown suggested that, while a learner, often applies the same fundamental strategies (e.g. rule transference) used in learning a language to communicate in that language, there are other communication strategies such as avoidance or message abandonment that do not result in learning.

In another direction, Tarone (1980) suggested that communication strategies can help to expand learning. Though the communication is not perfect in grammatical or lexical terms, the language learner will be exposed to language input which may result in learning, therefore, may be considered a learning strategy, the "*basic motivation is not to communicate but to learn*" (Tarone, 1980, p. 419). As acknowledged by Tarone (1980), the problem, then, is most likely to remain unsolved since, practically, there is no way to determine whether the learner's motivation or intention is to learn or communicate. Ellis (1994) conceded that there is "*no easy way of telling whether a strategy is motivated by a desire to learn or a desire to communicate*" (p. 530). This failure in differentiating plainly between communication strategies and learning strategies has led to

acknowledging the "*arbitrariness in the classification of learning strategies*" (Stern, 1992, p. 264).

In short, this inconsistent classification of strategies by researchers and writers in the field has contributed to difficulties, which unfortunately remain unsettled. Nonetheless, we shall subsequently offer a brief and broad overview of the field as reflected in the works of some authors that are cited in countless works: O'Malley and Chamot (1990), Oxford (1990), and Cohen (1998).

3.2.1. O'Malley and Chamot's Classification

In one of the most important research projects on language learning strategies, based on the *Active Control of Thought* model of Anderson (1983; 1985), O'Malley and Chamot (1990) established a great enterprise in the field. They identified several language learning strategies and classified them into three types as follows: a) *cognitive strategies*, which "*operate directly on incoming information, manipulating it in ways that enhance learning*" (O'Malley & Chamot, 1990, p. 44), include rehearsal, organisation, inferencing, summarising, deducing, imagery, transfer and elaboration; b) *metacognitive strategies*, which "*are higher order executive skills that may entail planning for, monitoring, or evaluating the success of a learning activity*" (O'Malley & Chamot, 1990, p. 44), are applicable to a variety of learning tasks; and c) *social/affective strategies*, which "*represent a broad grouping that involves either interaction with another person or ideational control over affect*" (O'Malley & Chamot, 1990, p. 45), are, too, applicable to a variety of tasks. The whole list of strategies, as grouped by O'Malley and Chamot in their original work (1990), is presented in the table below:

Table 1. *O'Malley and Chamot's classification of language learning strategies* (1990, p. 46)

Generic strategy classification	Representative strategies	Definitions
Metacognitive strategies	Selective attention	Focusing on special aspects of learning tasks, as in planning to listen for key words or phrases.
	Planning	Reviewing attention to a task, comprehension of information that should be remembered, or production while it is occurring.
	Evaluation	Checking comprehension after completion of a receptive language activity, or evaluating language production after it has taken place.
Cognitive strategies	Rehearsal	Repeating the names of items or objects to be remembered.
	Organization	Grouping and classifying words, terminology, or concepts according to their semantic or syntactic structures.
	Inferencing	Using information in text to guess meanings of new linguistic items, predict outcomes, or complete missing parts.
	Summarizing	Intermittently synthesizing what one has heard to ensure the information has been retained.
	Deducing	Applying the rules to the understanding of language.
	Imagery	Using visual images (either generated or actual) to understand and remember new verbal information.
	Transfer	Using known linguistic information to facilitate a new learning task.
	Elaboration	Linking ideas contained in new information, or integrating new ideas with known information.
Social/Affective strategies	Cooperation	Working with peers to solve a problem, pool information, check notes, or get feedback on a learning activity.
		Eliciting from the teacher or peer additional explanation, rephrasing, or examples.
		Using mental redirection of thinking to assure oneself that a learning activity will be successful or to reduce anxiety about a task

3.2.2. Oxford's Classification

Alternatively, Oxford (1990) established a 6-factor strategy taxonomy that has become, through the years, the most used by researchers in the field. She has developed her *Strategy Inventory for Language Learning* (SILL), which uses factor analyses as a statistical methodology to group the language learning strategies into six categories. She identified six major groups of second or foreign language learning strategies: a) *cognitive strategies*, which "*enable the learner to manipulate the language material in direct ways, e.g., through reasoning, analysis, note taking, and synthesizing*" (Ehrman et al., 2003, p. 316); b) *metacognitive strategies*, which are used to manage the learning process overall, include identifying one's own preferences and needs, planning, monitoring mistakes, and evaluating task success; c) *memory-related strategies*, which help learners link the target language item or concept with another, do not involve deep understanding; d) *compensatory strategies*, which help learners make up or compensate for missing information or knowledge, include guessing from the context, circumlocution, gestures, and pause words; e) *affective strategies*, which help learners manage their affect (emotions) and motivation level, include identifying one's mood and level of anxiety, talking about feelings, rewarding oneself, and using deep breathing or positive self-talk; and f) *social strategies*, which enable the learner to learn via interaction with others and understand the target culture. For a matter of comparison to come later, we present the whole list of strategies as grouped by Oxford (1990) in her original work:

Table 2. Oxfrod s taxonomy of language learning strategies (1990, pp. 18-21)

Direct strategies	Memory strategies	Creating mental linkage (grouping, associating/elaborating, placing new words into a context). Applying images and sounds (using imagery, semantic mapping, using key words, representing sounds in memory). Reviewing well (structures reviewing). Employing action (using physical response or sensation, using mechanical techniques).
	Cognitive strategies	Practicing (repeating, formally practicing with sounds and writing system, recognizing and using formulas and patterns, recombining, practicing naturalistically). Receiving and sending messages (getting the idea quickly, using resources for receiving and sending messages). Analysing and reasoning (reasoning deductively, analysing expressions, analysing contrastively, translating, transferring). Creating structure for input and output (taking notes, summarizing, highlighting).
	Compensation strategies	Guessing intelligently (using linguistic clues, using other clues). Overcoming limitations in speaking and writing (switching to the mother tongue, getting help, using mime or gesture, avoiding communication partially or totally, selecting the topic, adjusting or approximating the message, coining words, using circumlocution or synonyms).
Indirect strategies	Metacognitive strategies	Centring your learning (overviewing and linking with already known material, paying attention, delaying speech production to focus on listening). Arranging and planning your learning (finding out about language learning, organizing, setting goals and objectives, identifying the purpose of a language task, planning for a language task, seeking practice opportunities). Evaluating your learning (self-monitoring, self-evaluating).
	Affective strategies	Lowering your anxiety (using progressive relaxation, deep breathing, or meditation, using music, using laughter). Encouraging yourself (making positive statements, taking risks wisely, rewarding yourself) Taking your emotional temperature (listening to your body, using a checklist, writing a language learning diary, discussing your feeling with someone else).
	Social strategies	Asking questions (asking for clarification or verification, asking for correction). Cooperating with others (cooperating with peers, cooperating with proficient users of the new language). Empathizing with others (developing cultural understanding, becoming aware of others' thoughts and feelings).

Clearly enough, a considerable overlap exist between the two suggested strategy systems, though there are a number of divergences. Oxford's cognitive strategies approximately match O'Malley and Chamot's cognitive strategies. Nevertheless, O'Malley and Chamot's strategy of guessing from context (inferencing), which they listed as a cognitive strategy, is part of Oxford's compensation strategies, used to make up for missing information or knowledge.

As opposed to O'Malley and Chamot, Oxford deliberately listed memory strategies as a separate category from cognitive strategies, for she argued that memory strategies have specific functions that make them distinct from cognitive strategies in that they serve cognition and not deep processing of information. Hsiao and Oxford (2002) argued that "*Most of the memory devices do not tend to contribute to deep processing of language information, although cognitive strategies do contribute to deep processing*" (p. 371).

Interestingly, Oxford's metacognitive strategies correspond, by and large, to those of O'Malley and Chamot's. They have as a function planning, organising, evaluating, and self-monitoring. Both systems state strategies relating to affect and social interaction (affective strategies being techniques whereby the learner manages his or her emotions, and motivational states, and social strategies as techniques involving cooperative interaction with other people). As table 1 and 2 show, O'Malley and Chamot grouped these strategies together in that they form a one category labelled as social/affective strategies. In contrast, Oxford classified them as two separate categories.

As shown in both tables 1 and 2, classifications of language learning strategies are realised on the basis of different criteria, and are, in fact, open to debate. Nevertheless, Hsiao and Oxford (2002), comparing theories of language learning strategies, performed a confirmatory factor analysis in order to find out which theory proves to be consistent with learners' strategy use. Their findings suggested, however, that different possible approaches to strategies classification should be considered, though "*Oxford's 6-factor strategy taxonomy is the most consistent with learners' strategy use, although this model did not produce a fully adequate fit to the data*" (Hsiao & Oxford, 2002, p. 368).

Another point that Hsiao and Oxford's study did insist on again is the recognising of the importance of differentiating between second language and foreign language settings. They emphasised that ESL and EFL learners might have different patterns of strategy use as result of their learning environment. In addition to this, they admitted the considerable significance of distinguishing between strategies for learning the second or foreign language and strategies for using it. Even though, they acknowledged the difficulty (often impossibility) to discriminating, in actual practice, between learning from using the second or foreign language.

3.2.3. Cohen's Classification

Another offered classification of language learning strategies, though not widely used, is that of Cohen (1998). His description and classification of language learning strategies are based on the function of each strategy that is selected. He stated that even if strategies do have often one main function, "*it*

would seem useful to continue to identify the various functions that strategies may have" (Cohen & Weaver, 1998, p. 3).

As mentioned earlier, Cohen identified two types of strategies to learn a language; a) *language learning strategies*, which include strategies for identifying the material that needs to be learned (Cohen, 1998), consist of grouping words according to their grammatical category (e.g. nouns, verbs, adjectives, adverbs, etc.), frequent contact with the material (e.g. attending language classes, the completion of homework assignments, and memory techniques (e.g. rote learning) used whenever the material seems not to be learned, naturally; and b) *strategies for using the language*, which consist of four subsets: *retrieval* strategies (those strategies used in order to call up the material from areas of storage, through any memory technique used by the learner), *rehearsal* strategies (used to rehearse the target language structures), *cover* strategies (those techniques used by the language learner to create a seemingly-control material, when he or she actually does not), and *communication* strategies that form the last subset of language use strategies are used by the language learner in order to convey a meaningful, and informative message to either reader or listener. In spite of this, Cohen (1998) noted that "*communication strategies may or may not have any impact on learning*" (p. 7), and he followed his argument by saying that "*learners may use a vocabulary item encountered for the first time in a given lesson to communicate a thought, without any intention of trying to learn the word*" (Cohen, 1998, p. 7). Evidently, Cohen's taxonomy of language learning strategies seems to be more focused on strategies for using the language and not learning the language.

By and large, language learning strategies are a tool kit for dynamic, conscious, purposeful, and thoughtful learning. They prepare learners towards more determined, self-regulated, proficient learning, and more academic success. In our research, we will rely more considerably on the classification offered by Oxford (1990).

Chapter 3

THE FIELDWORK

I. THE PILOT STUDY

1. The Rationale Behind the Pilot Study

Our actual research was authentically guided by an undertaken pilot study (using a pilot questionnaire) that directed our investigation, specified our research scope, and set a refined research instrument to be used. It was on the basis of our pilot study results that a number of items in the pilot questionnaire were either changed or, completely, reformulated, and our research hypotheses were altered. Furthermore, our pilot study design was partly guided by the principle of combining the suggested theoretical input derived from the works of Broady (1996), Cotterall (1995), Hedge (2000), O'Malley and Chamot (1990), Oxford's (1990), Rivers (2001), and Gan (2004).

In this section we will give further detail about our pilot study.

2. Initial Research Hypotheses

The initial research hypotheses, we advocated, posited that: a) learners' attitudes towards self-directed English language learning and their used strategies were positively significantly associated with their level of achievement; and b) learners' attitudes towards self-directed English language learning were positively significantly associated with their reported used strategies. However, computing the Pearson product-moment correlation coefficients, not all associations between measures of the reported variables were positive, either statistically significant or non-significant as will be displayed in the correlation matrix, later.

On this basis, we decided to alter our research hypotheses, so that they would not specify the direction of the alternative hypotheses. For that purpose, we opted for the use of 2-tailed correlation tests.

3. The Pilot Sample

In this regard, we need mention that our target population (second year LMD students of English) from which our pilot study sample is taken consisted of 307 students assigned to a total of 13 groups. Each group consisted of about 23 students. However, our selected sample consisted of 36 students (males 8, females 28), equally recruited from 6 groups (1, 3, 6, 10, 11, and 13) at random.

4. The Pilot Questionnaire

The pilot study questionnaire consists of two designed parts representing both independent variables that are under investigation. Part A is composed of 15 items that represent 4 attitudes towards: a) confidence in abilities (4 items); b) the learner's role (4 items); c) the teacher's role (5 items); and d) initiative in learning (2 items). Part B is composed of 32 items that represent 5 learning strategies: a) cognitive strategies (12 items); b) metacognitive strategies (9 items); c) affective strategies (4 items); d) strategies for social and cooperative learning (4 items); and e) strategies for persistent and active learning (3 items). The individual statements that fall under each set of factors are listed in the appendix.

5. Procedure

We administered the questionnaire to the selected learners in their classrooms, with the presence of their respective teachers. Students were requested to respond

to the items in Part A along a 5-point Likert scale, where 1 indicates a strong disagreement, 2 moderate disagreement, 3 indicates neither agreement nor disagreement, 4 moderate agreement, and 5 indicates a strong agreement. Likewise, students were asked to report the frequency use of strategies listed in Part B along a 5-point Likert scale, too, where 1 indicates that the strategy is never used, 2 seldom used, 3 sometimes used, 4 usually used, and 5 indicates the most frequently used strategy. However, before the completion of the questionnaire, the participants were given uniform instructions on how to complete the questionnaire and the purpose for which it was designed. They were informed that: a) their participation was very appreciated and acknowledged; b) the completion of the questionnaire was an essential part of a scientific investigation that was related neither to their respective instructors nor the university; c) there were no right or wrong answers to the statements; and d) the results would be of great importance to the researcher. In addition, it is important to point out that they were not told to report their names on the questionnaire. However, in regard to students' identifications and confirmation of their scores on the three skills taken into account in the study to represent their level of achievement, we should mention that each questionnaire was assigned a coded identification number, and administered to a specific student, with their instructors' agreement and cooperation.

Students' level of achievement was measured by considering an average calculated from the students' obtained scores in three modules that are, specifically, related to language mastery, within the first semester of the academic year 2005-2006: a) grammar; b) oral expression; and c) written expression. The

students' scores were obtained from the Head of the Department of English, at MENTOURI University of Constantine.

6. The Pilot Study Results

All data were processed with the software package, Analyse-it+ General, release 1.71, for Microsoft Windows Excel.

Table I. Mean scores of attitudes and strategies among the participating learners.

Factor	Mean	SD
Attitudes towards confidence in abilities	4.00	0.79
Attitudes towards the role of the learner	3.76	0.81
Attitudes towards the role of the teacher	4.01	0.49
Attitudes towards initiative in learning	3.61	0.81
Cognitive strategies	3.52	0.57
Metacognitive strategies	3.57	0.57
Affective strategies	3.49	0.77
Social strategies	2.69	0.89
Strategies for persistent learning	3.47	0.71

Listwise N = 36.
SD: Standard Deviation

Table II. Correlation Matrix (the Pearson moment-product correlation coefficients)

	ATCAB	ATRL	ATRT	ATINL	CS	MS	AS	SS	SPL	LOA
ATCAB	1.00									
ATRL	0.35	1.00								
ATRT	0.09	0.30	1.00							
ATINL	0.13	0.74**	0.37*	1.00						
CS	0.19	0.57**	-0.04	0.41*	1.00					
MS	0.19	0.45*	0.20	0.31	0.65**	1.00				
AS	-0.12	0.12	-0.17	0.01	0.38*	0.52**	1.00			
SS	-0.06	0.07	0.24	0.08	0.20	0.19	0.15	1.00		
SPL	0.28	0.54**	0.15	0.39*	0.42*	0.63**	0.42*	-0.05	1.00	
LOA	0.13	0.49**	0.04	0.31	0.30	0.44*	0.19	-0.31	0.53**	1.00

Listwise N = 36
Confidence interval 95%
*p<.05; **p< .01

LOA: level of achievement (A, B, C)
ATCAB: attitudes towards confidence in abilities
ATRL: attitudes towards the role of the learner
ATRT: attitudes towards the role of the teacher
ATINL: attitudes towards initiative in learning
CS: cognitive strategies
MS: metacognitive strategies
AS: affective strategies
SS: social strategies
SPL: strategies for persistent learning

Table I and II give an overall picture of the sample's means for both attitudinal and strategic factors, and various correlations among all the considered variables. Though the participating learners' (in the pilot investigation) confidence in their abilities to carry out a successful learning of English language does not display, statistically, a significant correlation with their level of achievement (statistic $r = .13$), the participants showed markedly a considerable confidence in their abilities to be successful students. Quite the contrary, the participants demonstrated more support to the role of teachers in the English learning process in comparison with their support to their own role, which, as a matter of fact, is the only factor that correlates positively significantly with their level of achievement (statistic $r = .49$, $p < .01$).

The sample's frequency use of metacognitive strategies is the highest among all other means, and, alternatively, shows a positive, significant correlation with learners' level of achievement (statistic $r = .44$, $p < .05$). Likewise, the participants demonstrated the same frequency use of strategies for persistent English language learning that displays the highest positive significant correlation with their level of achievement (statistic $r = .53$, $p < .01$). However, it is of utmost importance to note that the participating learners demonstrated the lowest frequency use of cooperative and social strategies for English learning that correlate negatively significantly with their level of achievement (statistic $r = -.31$).

Interestingly, the correlation matrix shows several positive significant associations between learners' reported attitudes and strategies in self-directed learning of English. The participating learners' conception of themselves (i.e. role) as language learners correlate positively significantly with their frequency use of:

a) cognitive strategies (statistic r = .57, p< .01); b) metacognitive strategies (statistic r = .45, p< .05); and c) strategies for persistent learning (statistic r = .54, p< .01). Further, the learners' reported attitudes towards initiative and independence in English language learning correlate positively significantly with their frequency use of: a) cognitive strategies (statistic r = .41, p< .05); and b) strategies for persistent learning (statistic r = .39, p< .05).

In another perspective, the correlation matrix reveals that the learners' reported attitudes towards their role as language learners show a high positive significant correlation with their attitudes towards initiative and independence in English learning (statistic r = .74, p< .01). Moreover, the learners' frequency use of strategies for persistent English learning strategies correlates positively significantly with their: a) cognitive strategies (statistic r = .42, p< .05); b) metacognitive strategies (statistic r = .63, p< .01); and c) affective strategies (statistic r = .42, p< .05). Similarly, the participants' reported frequency use of metacognitive strategies correlates positively significantly with their: a) cognitive strategies (statistic r = .65, p< .01); b) affective strategies (statistic r = .52, p< .01); and c) strategies for persistent English learning (statistic r = .63, p< .01).

On the basis of the obtained results of our pilot investigation, we conclude that the participating students' conception of themselves as language learners, use of metacognitive strategies and strategies for persistent English language learning are positively significantly associated with their level of achievement.

7. Modification of Items

At the very beginning, we expected our designed pilot questionnaire to be well organised, well defined and structured. Although the participating learners did not encounter a great difficulty in understanding the vocabulary used and the items listed, a number of remarks and questionings were made by the participating learners across the six groups. Several participants encountered perceptible difficulty in understanding some specific attitudinal items: 4, 5, and 14. Those items were later either modified or completely reformulated. Other learners informed us about some of the strategies they used in their attempts to be proficient in English as the use of rhymes to remember new English words, the selection of particular books to read, and viewing English TV programmes and films. All learners' remarks and suggestions were taken into account, and actually manifest in the research questionnaire.

II. THE ACTUAL STUDY: INVESTIGATING LEARNERS' ATTITUDES AND STRATEGIES

As stated in the previous section, our pilot investigation results were a good indicator that provided us with some assurances against a number of risks that we might encounter in our actual investigation. Acting upon the previously discussed remarkable findings that prompted us to go further in our study, we came at a decision to adjust our research hypotheses, and run 2-tailed tests of correlation in order to specify no direction of our alternative hypotheses.

1. Statistical Hypotheses

For being mainly a quantitative research, six statistical hypotheses were tested in our study at the conventional 95% confidence interval. Furthermore, it is of utmost importance to state, here, that statistical hypotheses are different from research hypotheses in that they are set, that is, they come with the test. Stated another way, while the research hypotheses reflect the questions behind the research, statistical hypotheses consist of the null hypothesis (H_0) and the alternative hypothesis (H_1). The null hypothesis, invariably, suggests that any relationship or difference discerned is due to chance factors, i.e. there are no relationships or differences. The alternative hypothesis proposes that the relationship or difference discerned is real and not attributable to chance factors.

Our set statistical hypotheses are as follows:

Hypothesis 1 posits that the relationships of language achievement level to the reported measures of self-directed English learning attitudes and strategies are null (the null hypothesis, H_0).

Hypothesis 2 assumes that the reported measures of the participating learners' attitudes towards self-directed learning of English correlate significantly with their level of achievement, and the reported measures of their English learning strategies do not.

Hypothesis 3 posits that the reported measures of the participating learners' English learning strategies correlate significantly with their level of achievement, and the reported measures of their attitudes towards self-directed learning of English do not.

Hypothesis 4 assumes that both reported measures of the participating learners' attitudes and strategies in self-directed learning of English correlate significantly with their level of achievement, and the correlations of the reported measures of attitudes are more significant than for the other measures.

Hypothesis 5 posits that the reported measures of the participating learners' attitudes and strategies in self-directed learning of English correlate significantly with their level of achievement, and the correlations of the reported measures of strategies are more significant than for the other measures.

Hypothesis 6 assumes that the relationships of language achievement level to the reported measures of self-directed English learning attitudes and strategies are significant, and moderately even for both measures.

2. Analyses and Interpretation of Results

Our actual research results are discussed and interpreted below in three main parts. The first part deals with students' reported attitudes towards self-directed

language learning and their relationship to students' level of achievement. The second part addresses learners' reported used strategies in their autonomous learning of English and their relationship, too, with the learners' level of achievement. The third part addresses all variables, simultaneously.

2.1. Self-Directed Language Learning Attitudes

Descriptive statistics were used to identify the general characteristics of the respondents' reported measures of attitudes towards autonomous learning.

Table 3. Attitudes of the participating learners towards autonomous learning

Factor	Mean	SD
Attitudes towards confidence in abilities	4.12	0.69
Attitudes towards the role of the learner	3.85	0.72
Attitudes towards the role of the teacher	4.03	0.56
Attitudes towards initiative in learning	3.74	0.74

Listwise N = 82
SD: Standard Deviation

Table 3 gives an overall view of practically fair support for self-directed language learning among the respondents under investigation (the individual statements that fall under each set of factors are listed in the appendix). The mean score for the items categorised under attitudes towards confidence in abilities indicates that the mainstream of students have reasonably a strong sense of the self with regard to engaging in autonomous language learning. This positive belief in the self was illustrated by the fact that 74.39% of the learners reported either an agreement or strong agreement with the statement *'I feel confident about my abilities to study English with success'*, and that 71.95% reported, too, an agreement or strong agreement with the statement *'I know how to find my own style of learning English'*. Moreover, the participating learners, in our study,

seemed to largely value and appraise the role of the learner in learning the language, as illustrated by the fact that 56.09% of them reported either agreement or strong agreement with the statement *'To learn English with success, it is important for me to organise my own learning'*.

As illustrated by the mean score of the sample, the participating learners valued considerably the teacher's role in language learning, likely in regard to some aspect of language learning: 62.19% of the respondents reported either an agreement or strong agreement with the statement *'The best way to learn English for me is mostly in the classroom from the teacher'*, and 59.07% reported either agreement or strong agreement with the statement *'It is important for me that my teacher should evaluate my assignments regularly'* . However, we argue that it is more likely to interpret these results not as reflecting the students' lack of self-direction, but rather as reflecting the actual Algerian EFL context, where most of learners' English language input does come from their teachers. Therefore, some learners might believe that likely a good teacher, who is better informed about the standard of English required by the institution (i.e. the university) and about the alternative methods to learn the language, is a central resource they should make full use of and rely on in order to achieve a better learning of the language.

The respondents also demonstrated a considerable awareness in regard to the importance of learner's initiative and autonomy in language learning. It is worth to point out that 52.44% of the students reported either an agreement or strong agreement with the statement *'It is important for me to propose topics for discussion in oral expression class'*.

To gain some more insights into students' reported attitudes and their relationship to their level of achievement, the Pearson product-moment correlation coefficients were calculated at the conventional 95% confidence interval. The attitudinal factors are: a) learners' reported attitudes towards confidence in abilities (*ATCAB*); b) learners' reported attitudes towards the role of the learner (*ATRL*); c) learners' reported attitudes towards the role of the teacher (*ATRT*); and d) learners' reported attitudes towards initiative in learning (*ATINL*). The obtained results are shown below in table 4.

Table 4. Pearson correlations among the participating learners' attitudes towards autonomous learning of English and level of achievement

	ATCAB	ATRL	ATRT	ATINL	LOA
ATCAB	1.00				
ATRL	0.29**	1.00			
ATRT	0.07	0.13	1.00		
ATINL	0.21	0.59****	0.23*	1.00	
LOA	0.30**	0.42****	0.08	0.45****	1.00

Listwise N = 82
Confidence interval 95%
2-tailed *p< .05; 2-tailed **p< .01; 2-tailed ***p< .001; 2-tailed ****p< .0001

As shown in table 4, all attitudinal factors, except attitudes towards the role of the teacher, show positive, significant correlations with the level of achievement. Students' attitudes towards initiative in learning show the most significant, positive correlation of all other three attitudinal factors (statistic r = .45, 2-tailed p< .0001). Similarly, learners' reported attitudes towards the role of the learner in language learning and confidence in abilities show fairly high positive, significant correlations with the level of achievement (statistic r = .42, 2-tailed p< .001; statistic r = .30, p< .01), respectively. These results indicate that the language learner's positive belief in his or her own capabilities and potentials,

his or her positive responsiveness to the requirements of the learning task (i.e. the learner's assuming of responsibility), and the learner's awareness of the importance of initiative in language learning will more likely to be positively associated with his or her high level of achievement. In addition, the learners' perceptions of their own abilities show a positive, significant correlation with their belief in their responsibility to control the language learning process (statistic $r = .29$, 2-tailed $p < .01$). Their belief in the role they have to assume, being the central part of the learning process, illustrates indisputably a significant, positive correlation with their belief in learning initiative and independence (statistic $r = .59$, 2-tailed $p < .0001$). Therefore, students' affective and cognitive beliefs prove to be associated.

Strengthening our analysis in order to elucidate the relationships in greater detail, we divided the students into three groups of achievers on the basis of their obtained scores. Differences in the means of attitudes in relation to level of achievement were determined by using a one-way analysis of variance (ANOVA). Then, we used the Scheffe post-hoc test to view where any significant differences lay (the Scheffe post-hoc test is an error protection method used to control the chance of committing a Type I error to either per-comparison or the entire experiment when computing contrasts for a one-way ANOVA).

Table 5. The three level achievement groups

Level of achievement group	Number of students	Grade
High	14	A
Medium	50	B
Low	18	C

High-level achievement group **A** (average calculated superior to 13.00)
Mid-level achievement group **B** (average calculated in between 10.00 and 13.00)
Low-level achievement group **C** (average calculated inferior to 10.00)

Table 6. Variations in attitudes among the three achievement groups

	High		Medium		Low		*F*-test
	M	**SD**	**M**	**SD**	**M**	**SD**	*Significance*
Attitudes towards confidence in abilities	04.39	0.61	04.21	0.48	03.67	01.02	5.59 p< .01 Adjusted R^2 = .11
Attitudes towards the role of the learner	04.20	0.46	03.69	0.56	03.33	0.99	7.85 p< .001 Adjusted R^2 = .14
Attitudes towards the role of the teacher	04.10	0.64	04.06	0.54	03.91	0.58	0.55 p = .58 Adjusted R^2 = - .01
Attitudes towards initiative in learning	04.24	0.39	03.75	0.71	03.32	0.78	7.11 p< .01 Adjusted R^2 = .13

Listwise N = 82
Confidence interval 95%
Significant *F* = 3.11
M represents the mean of each factor under each group
SD represents the standard deviation of each factor under each group

As table 6 illustrates, a one-way analysis of variance of the means of attitudes towards the underlying constructs of self-directed language learning shows significant results, except for the third construct (attitudes towards the role of the teacher). Stated another way, significant differences in the learners' level of achievement are attributed to the action (effect) of the three sets of factors (taken independently), and not due to random fluctuations in the sample. Furthermore, as shown in table 7, pairwise comparisons of attitudes' means towards self-directed language learning sets of factors among the three level achievement groups show statistically some significant differences: a) low-level achievers vs. mid-level achievers; b) low-level achievers vs. high-level achievers; and c) mid-level achievers vs. high-level achievers. The latter pairwise comparison is exceptionally non-significant throughout the four sets of factors.

Table 7. Pairwise comparisons of attitudes' means among the achievement groups

	Attitudes towards			
	Confidence in abilities	**The role of the learner**	**The role of the teacher**	**Initiative in learning**
Contrast				
Low vs. Medium	-0.54 *Sig*	-0.63 *Sig*	-0.15 *Non-sig*	-0.43 *Non-sig*
Low vs. High	-0.72 *Sig*	-0.87 *Sig*	-0.19 *Non-sig*	-0.92 *Sig*
Medium vs. High	-0.18 *Non-sig*	-0.24 *Non-sig*	-0.04 *Non-sig*	-0.49 *Non-sig*

Listwise N = 82
Confidence interval 95%
Sig: Significant
Non-sig: Non-significant
(The *F*-test and significance level for each attitudinal factor are reported in table 6)

In addition, there are statistically no significant differences among the three achievement groups for the third attitudinal factor, i.e. attitudes towards the role of the teacher. In other words, self-directed language learning attitudinal sets of factors (with the exception of the attitudes towards the teacher's role) can be used to differentiate between these Algerian participating students for their level of achievement as EFL learners. Interestingly, when taken independently, attitudes towards the role of the learner, in our study, explains 14% of the variance in participants EFL level of achievement (adjusted $R^2 = .14$) which is the highest in comparison with the other attitudinal factors.

To further examine the obtained results from the processing of attitudinal data, we performed a multiple regression analysis in order to identify the best predictor of learners' level of achievement among the four attitudinal factors.

Table 8. Multiple regression: attitudes as predictors of level of achievement

Factor (variable)	Coefficient	Significance
Attitudes towards confidence in abilities	0.46	0.08
Attitudes towards the role of the learner	0.47	0.13
Attitudes towards the role of the teacher	-0.09	0.77
Attitudes towards initiative in learning	0.76	0.01*

Listwise N = 82
Confidence interval 95%
*p< .05; $F = 7.17$ (p< .0001)
Adjusted $R^2 = .23$

Findings in table 8 suggest that, among the four underlying constructs of self-directed language learning (taken simultaneously), only students' attitudes towards initiative in learning shows a significant result (p< .05). While students' attitudes towards confidence in abilities show a statistical significance (to predict the students' level of achievement) at the 92% confidence interval, students' attitudes towards their role as learners and the role of teachers are

statistically not significant, and show statistical significance at fairly less important significance levels.

On the basis of the obtained results, we find it interesting to reveal that, in our study, high level achievers could be characterised as being more confident in their abilities, holding more positive attitudes towards assuming more responsibility towards their language learning process, and demonstrating considerable awareness of the importance of initiative in learning and the potential benefits of independent and self-managed learning. Additionally, learners' awareness of the necessity of independent learning and initiative in language learning proves to be significantly the best predictor of their level of achievement. When taken as independent factors, attitudes towards the role of the learner explain 14% of the variance in the level of achievement, and attitudes towards initiative in learning explain 13% of the variance. However, when taken in concert, self-directed attitudinal factors, in our study, explain 23% of the variance in the participating learners' level of language achievement. Therefore, there is clearly enough evidence to argue that learners' attitudes influence their language level of achievement. We believe that this contribution is fairly a significant percentage that is not to trivialise.

2.2. Self-Directed Language Learning Strategies

Descriptive statistics were, too, used in this section to identify the general characteristics of the respondents' reported measures of the frequency use of self-directed language learning strategies. But prior to this, we present table 9 to offer some look at percentages and means of some reported used strategies,

including items form all types of strategies (the selection of the items is rather random than deliberate).

Table 9. Percentages of some reported used strategies of the participating learners

Individual self-directed language learning strategies	Mean	Merged responses (UA)*
I plan to improve my writing skill.	4.00	79.26%
I think about whether I am making a progress in English learning.	4.01	74.39%
I try to find how to be a better learner of English.	4.40	90.24%
I use new English words in a sentence so that I can remember them.	3.07	63.41%
I listen to music tapes to be familiar with English accents	3.20	46.34%
I guess meaning of the English word I do not understand by dividing it into parts that I understand.	3.20	47.56%
I talk to myself in English outside the classroom	3.80	63.41%
I give myself a reward when I perform well on an English test (when I have a good mark).	3.20	46.34%
I spend time improving my English even if I am not required to do so by the teacher.	3.50	52.43%
I keep working until I finish the task at hand even when it is boring.	3.30	47.56%
I prepare on advance my lesson on my own initiative.	2.80	28.05%
I ask my teacher for help when I have problems in English learning.	3.60	54.87%
I talk to my classmates in English even when I am outside the classroom.	2.80	25.60%

Listwise N = 82

*UA: combined responses of 'I usually' and 'I always' do this.

Table 10. Self-directed language learning strategies of the participating learners

Factor	Mean	SD
Cognitive strategies	3.51	0.51
Metacognitive strategies	3.60	0.52
Affective strategies	3.36	0.68
Social strategies	2.76	0.87
Strategies for persistent learning	3.39	0.75

Listwise N = 82

SD: Standard Deviation

Table 10 shows an overall picture of language learning strategies used by participating EFL learners as reported in the questionnaires (the individual statements that fall under each set of factors are listed in the appendix). Clearly enough, the mean score for metacognitive strategies (*MS*) is the highest among the five reported used strategies. Participating EFL learners prove to recognise also the importance of organising, scheduling, monitoring, and evaluating one's own learning process. Additionally, strategies for persistent learning (*SPL*), affective (*AS*) and cognitive strategies (*CS*) appear to be used fairly frequently by the participating learners. Social strategies (*SS*), on the contrary, seem to be the least used ones by the participating EFL students.

Taken individually, some language learning strategies appear to be used only by a fairly small percentage of learners. For instance, 25.60% of respondents reported that they (usually or always) used to talk their classmates in English when they are outside the classroom. This little use of the latter strategy can be best explained by the fact that the English language has the status of a foreign language in Algeria, and is not commonly used, even by its learners, outside the academic context, where it is originally taught. Furthermore, it is worth to point out that Hsiao and Oxford (2002), recognising the importance of second language versus foreign language environments in which learning takes place, argued that "*ESL and EFL students might have different patterns of strategy use as a result of their learning environments*" (p. 380). Algerian EFL learners, participants under investigation in our study, reported again a relatively low frequency use of some strategies for persistent and active learning: only 28.05% of them reported that they (usually or always) used to prepare their lessons in advance on their own initiative. In fact, such a noticeable low frequency of this strategy

may reflect the participating learners' lack of self-efficacy. Dembo (2004) argued that "*efficacy beliefs are important predictors of student motivation and self-managed behaviors*" (p. 68).

Conclusively, according to the obtained results of our study, the participating EFL learners appear to use a variety of language learning strategies at different frequencies.

Though our study is exploratory in nature, our aim is not only to reveal the range of learning strategies used by the participating EFL learners, but is also to find out how learners' strategies are associated with their level of achievement. For that purpose, the Pearson product-moment correlation coefficients were calculated at the conventional 95% confidence interval. The obtained results of the processing of our data are set out in table 11.

Table 11. Pearson correlations among the participating learners' strategies and level of achievement

	CS	MS	AS	SS	SPL	LOA
CS	1.00					
MS	0.47****	1.00				
AS	0.36***	0.45****	1.00			
SS	0.11	0.31**	0.13	1.00		
SPL	0.27*	0.46****	0.43****	0.18	1.00	
LOA	0.19	0.32**	0.07	-0.08	0.43****	1.00

Listwise N = 82
Confidence interval 95%
2-tailed *p< .05; 2-tailed **p< .01; 2-tailed ***p< .001; 2-tailed ****p< .0001

Table 11 indicates how learners' reported used strategies are associated with their level of achievement, and how they are associated with each other (i.e. the direction). Students' reported strategies for self-directed, persistent, and active learning correlate (evidently enough) significantly positively with their level of

achievement (statistic r = .43, 2-tailed p< .0001). As well, metacognitive self-directed language learning strategies provide, statistically, positive, significant evidence to be associated with learners' level of achievement (statistic r = .32, 2-tailed p< .01). Alternatively, cognitive strategies and affective strategies correlate positively, but not significantly with the students' level of achievement.

However, the learners' reported used strategies for cooperative and social learning correlate negatively, but not significantly with their current level of achievement. Though this negative correlation is not significant, it is very important to pay attention to the potential negative outcomes of social, cooperative learning. This negative correlation could be explained by the fact that social learning does not guarantee any positive results unless it is wisely guided. It is likely that cooperative learning does not give all learners the same equal chances to profit from it, and does not match all learners' style of learning. Therefore, we argue that social and cooperative learning may not meet the needs of all learners, and should be dealt with great thoughtfulness. We will come to this point later in the discussion.

Pertaining to learners' reported strategies themselves, it is worth to note that the use of some learning strategies appear to be associated with others: a) learners' reported metacognitive strategies show positive, significant correlations with the use of all other strategies (cognitive, affective, social, and strategies for persistent language learning); b) students' use of cognitive learning strategies shows positive, significant correlations with the use of affective strategies, and strategies for persistent language learning; and c)

students' reported strategies for persistent learning demonstrate a positive, significant correlation with their use of affective strategies (for correlation coefficients and reported probabilities, see table 11).

As reported by some researchers (Hsiao & Oxford, 2002; Griffiths, 2003; Gan, 2004), more successful learners exhibit a full use of a wide range of learning strategies. They use these strategies more effectively and intelligently than less successful learners. For this matter, and in order to extend our analysis and see whether there are actually some considerable differences in the mean frequency use of language learning strategies among the three achievement groups (as classified previously), we performed a one-way analysis of variance upon our collected data, and used a Scheffe post-hoc test to view where any significant differences lay. The obtained findings are presented below in table 12.

Table 12. Variations in autonomous learning strategies of English among the three achievement groups

	High		Medium		Low		*F*-test
	M	**SD**	**M**	**SD**	**M**	**SD**	*Significance*
Cognitive strategies	03.51	0.53	03.58	0.46	03.30	0.58	2.00 p = .14 Adjusted R^2 = .02
Metacognitive strategies	03.79	0.57	03.63	0.50	03.36	0.49	2.96 p = .06 Adjusted R^2 = .04
Affective strategies	03.51	0.67	03.35	0.61	03.28	0.87	0.49 p = .62 Adjusted R^2 = - .01
Social strategies	02.39	0.53	02.90	0.88	02.67	0.99	2.02 p = .14 Adjusted R^2 = - 1.77
Strategies for persistent learning	03.68	0.86	03.53	0.62	02.78	0.73	9.34 p< .001 Adjusted R^2 = .17

Listwise N = 82
Confidence interval 95%
Significant F = 3.11
M represents the mean of each factor under each group
SD represents the standard deviation of each factor under each group

As indicated in table 12, aside from strategies for persistent language learning, all other strategic factors show no statistical significance. Strategies for persistent learning, when taken independently, explain 17% variance in the learners' level of achievement which is the highest contribution in comparison to all other strategies. Metacognitive strategies, however, show statistical significance at the 94% confidence interval that cannot be trivialised. Using the Scheffe post-hoc test to view the source of significance (differences in the means) in strategies for persistent language learning among the three groups (pairwise contrasts) indicates that there are actually differences between: a) low-level achievers vs. mid-level achievers; and b) low-level achievers vs. high-level achievers (see table 13).

Table 13. Pairwise comparisons of strategies' means among the achievement groups

	Language learning strategies				
	Cognitive	**Metacognitive**	**Affective**	**Social**	**Persistent learning**
Contrast					
Low vs. Medium	-0.28 *Non-sig*	-0.27 *Non-sig*	-0.07 *Non-sig*	-0.23 *Non-sig*	-0.75 *Sig*
Low vs. High	-0.21 *Non-sig*	-0.43 *Non-sig*	-0.23 *Non-sig*	0.28 *Non-sig*	-0.90 *Sig*
Medium vs. High	0.07 *Non-sig*	-0.16 *Non-sig*	-0.16 *Non-sig*	0.51 *Non-sig*	-0.15 *Non-sig*

Listwise N = 82
Confidence interval 95%
Sig: Significant
Non-sig: Non-significant
(The *F*-test and significance level for each strategic factor are reported in table12)

Noteworthy, we performed a number of pairwise contrasts for metacognitive strategies aiming at identifying at which confidence interval any difference

between the groups' means proves statistical significance. Interestingly, at the 92% confidence interval, the difference in the mean score for the use of metacognitive strategies between low-level achievers and high-level achievers is significant. In addition, it is worth to note that high-level achievers used to make the least use of social strategies among all others (see table 12). With regard to this, we see the need to investigate necessarily the efficiency of the use of social strategies, and how much personality traits are associated with both learners' preference for strategies for cooperative learning, their level of achievement, and proficiency in language learning. Again, we shall come to this point in further detail in a later section.

As a final step in our analysis of the contribution of learning strategies into learners' level of achievement and to which extent we can rely on language learning strategies to expect the students' level of achievement, we ran a multiple regression to reveal the best predictor of students' level of achievement among the five strategic factors. We entered the five strategic factors as the independent variables and the learners' calculated score as the dependent variable, and calculated the regression coefficients at the conventional 95% confidence interval. The obtained are presented below in table 14.

Table 14. Multiple regression: strategies as predictors of the participating learners' level of achievement

Factor (variable)	Coefficient	Significance
Cognitive strategies	0.17	0.67
Metacognitive strategies	0.93	0.04*
Affective strategies	-0.58	0.06
Social strategies	-0.43	0.04*
Strategies for persistent learning	1.00	0.0004**

Listwise N = 82
Confidence interval 95%
*p< .05; **p< .001; $F = 5.80$ (p< .001)
Adjusted $R^2 = .23$

Contrary to attitudinal factors, which appear to be poor predictors of learners' level of achievement, learners' reported strategies emerge as better predictors, with strategies for persistent learning as the pre-eminent positive one. Too, metacognitive strategies show a positive, significant result in predicting learners' level of achievement (consider the coefficients and the probabilities). Likewise, social strategies show a negative, significant result when forecasting the students' level of achievement. Though not conventionally significant, learners' reported used affective strategies appear to predict negatively their level of achievement. Cognitive strategies prove to be poor predictors of students' level of achievement, as a matter of fact.

Therefore, according to our study findings, all learners appear to use reasonably a number of language learning strategies. Particularly, high-level achievers' frequency use of metacognitive strategies, affective strategies, and strategies for persistent learning is moderately higher than for the other groups. Interestingly, high-level achievers appear to make the least use of social strategies among the other groups. Although the learners' reported used strategies (4 strategies among five) are good predictors of their level of

achievement, only metacognitive strategies and strategies for persistent learning show positive, significant correlations with learners' level of achievement. In addition, when taken simultaneously, learners' reported used strategies explain 23% of the variance in the learners' level of achievement.

2.3. Attitudes, Strategies, and Level of Achievement

In this part, we take all the variables under investigation in concert, identify the best predictor of learners' level of achievement among both sets of factors, and see the extent to which learners' attitudes towards self-directed language learning do correlate with their reported used learning strategies. The findings are presented in both tables 15 and 16 below.

Table 15. Multiple regression: attitudes and strategies as predictors of the participating learners' level of achievement

Factor (variable)	Coefficient	Significance
Attitudes towards confidence in abilities	0.31	0.24
Attitudes towards the role of the learner	0.39	0.21
Attitudes towards the role of the teacher	-0.005	0.99
Attitudes towards initiative in learning	0.59	0.05*
Cognitive strategies	-0.29	0.49
Metacognitive strategies	0.72	0.09
Affective strategies	-0.23	0.46
Social strategies	-0.48	0.03*
Strategies for persistent learning	0.61	0.03*

Listwise N = 82
Confidence interval 95%
*p≤ .05; F = 5.02 (p< .0001)
Adjusted R^2 = .31

Table 16. Pearson correlations among the participating learners' attitudes towards autonomy, strategies of English learning, and learners' level of achievement

	ATCAB	ATRL	ATRT	ATINL	CS	MS	AS	SS	SPL	LOA
ATCAB	1.00									
ATRL	0.29**	1.00								
ATRT	0.07	0.13	1.00							
ATINL	0.21	0.59****	0.23*	1.00						
CS	0.18	0.39***	-0.08	0.31**	1.00					
MS	0.21	0.26*	0.18	0.32**	0.47****	1.00				
AS	-0.04	0.10	0.04	0.02	0.36***	0.45****	1.00			
SS	0.11	0.06	0.30**	0.17	0.11	0.31**	0.13	1.00		
SPL	0.28*	0.33**	0.10	0.36***	0.27*	0.46****	0.43****	0.18	1.00	
LOA	0.30**	0.42****	0.08	0.45****	0.19	0.32**	0.07	-0.08	0.43****	1.00

Listwise N = 82
Confidence interval 95%
2-tailed *p< .05; 2-tailed **p< .01; 2-tailed ***p< .001; 2-tailed ****p< .0001

LOA: level of achievement (A, B, C)
ATCAB: attitudes towards confidence in abilities
ATRL: attitudes towards the role of the learner
ATRT: attitudes towards the role of the teacher
ATINL: attitudes towards initiative in learning
CS: cognitive strategies
MS: metacognitive strategies
AS: affective strategies
SS: social strategies
SPL: strategies for persistent learning

Some attitudinal factors and language learning strategies, as shown in table 15, when taken simultaneously as explanatory variables accounting for learners' level of achievement, show statistical significance in predicting the students' level of achievement. On the one hand, learners' attitudes towards autonomy prove to be poor predictors (or estimators) of their level of achievement, except for their attitudes towards learning initiative and independence. The regression coefficient of learners' attitudes towards initiative in learning and independence shows statistical significance at the conventional 95% confidence interval.

On the other hand, two language learning strategies among five (reported in the questionnaires) show statistical significance in predicting students' level of achievement at more than the 95% confidence interval. In contrast to social strategies that show a negative, significant result, strategies for persistent language learning show positive, significant result in predicting the learners' level of achievement. Other factors show significant results at negligible confidence intervals. Moreover, attitudes and strategies in self-directed language learning among EFL learners under investigation account for 31% of the variation in their level of achievement (adjusted $R^2 = .31$). This percentage is substantial, and actually could neither be overestimated nor trivialised. Therefore, we reject the null hypothesis (H_0) stating that there are no associations between learners' level of achievement and any of their reported attitudes and strategies, with a high degree of confidence (i.e. with a 1% level of significance).

Alternatively, an examination of table 16 (correlation matrix) gives an overall picture of correlations between all the variables under inquiry. A number of the

learners' reported, used self-directed language learning strategies show positive, significant correlations with their reported attitudes towards autonomy in English language learning. Learners' reported attitudes towards their role as language learners show positive, significant correlations with: a) cognitive strategies (statistic r = .39, 2-tailed p< .001); b) metacognitive strategies (statistic r = .26, 2-tailed p< .05); and c) strategies for persistent learning (statistic r = .33, 2-tailed p< .01). Likewise, learners' reported attitudes towards initiative in learning show positive, significant correlation with: a) cognitive strategies (statistic r = .31, 2-tailed p< .01); b) metacognitive strategies (statistic r = .32, 2-tailed p< .01); and c) strategies for persistent learning (statistic r = .36, 2-tailed p< .001). Further, students' reported attitudes towards confidence in abilities show a positive, significant correlation with their strategies for persistent learning (statistic r = .36, 2-tailed p< .001). However, learners' reported attitudes towards the role of the teacher correlates positively, significantly with the students' reported strategies for social and cooperative learning (statistic r = .30, 2-tailed p< .01). Learners' reported strategies for persistent learning show remarkably more positive, significant correlations with their reported attitudes than the other strategies. Furthermore, correlating only with learners' reported attitudes towards the teacher's role, strategies for social and cooperative English language learning among participating EFL learners question further their efficiency, the psychological characteristics of those learners who use them, and their perceptions of their role in the language learning process as university students.

3. Discussion

Second-year LMD students of English at MENTOURI University of Constantine in our study demonstrated, considerably, a positive attitude towards self-directed English language learning, and reported different use frequencies of self-directed language learning strategies. For the latter, metacognitive and cognitive strategies are the most frequently used, and strategies for social and cooperative learning are the least used ones. In addition, both attitudes and strategies (on the whole) correlate with learners' level of language achievement, and explain a percentage of the variation in their level of achievement that is not to underestimate. All learners' attitudes towards self-directed English learning, except for attitudes towards the role of the teacher, display a positive, significant correlation with their level of achievement. The students' reported metacognitive strategies and strategies for persistent and active learning show positive, significant correlations with their level of language achievement, with the latter's correlation coefficient being the highest.

It is of interest to note that these results seem to confirm and echo previous research findings. Masgoret and Gardner (2003), in a meta-analysis of attitudes, motivation, and second language learning, found that attitudes towards the learning situation correlates positively significantly with university students' grades (mean corrected $r = .17$, $p < .05$). In a similar study to investigate the effects of the Hong Kong Polytechnic University students' attitudes and strategies in self-directed English language upon their language proficiency, Gan (2004) reported, relatively, analogous results. With regard to attitudes, Gan found that only learners' robust sense of the self in language learning was positively significantly associated with their learning proficiency (statistic $r = .108$, $p < .05$). Other

attitudinal factors such as the learner's role and initiative in learning were, non-significantly, associated with their language proficiency (statistic r = .047; statistic r = .030), respectively. Dembo (2004), arguing in favour of the importance of holding positive beliefs and perceptions about the self as an important factor that can impact the learner's achievement, noted that:

> *"Some students believe that ability or intelligence is fixed. That is, people are born with a certain amount of ability, and there is not much that can be done about it. This misperception often causes some students to accept their low achievement or to become satisfied with a B or C average, thinking that only the brightest students obtain an A"* (p. 8).

Another important point, our study suggests, is that learners' attitudes towards their role as language learners (assuming more responsibility of the learning process) and their atitudes towards initiative and independecne in learning are, positively, associated with their reported frequency use of strategies for persistent language learning. As a result, language learners' beliefs and perceptions about language learning appear to influence their behaviour. That is, when language learners realise and assume their responsibilty in the learning process, they use their appropriate effort and methods of learning and find out that independent efforts pay off in terms of higher grades. Zimmerman et al. (1996) pointed out that more successful learners view learning as something they do for themselves rather than as something that is done for them.

The findings of our study have, too, a major theoretical implication for the conceptualisation of attitude as a psychological notion in applied linguistics researches. The attitude as an inferred latent construct can manifest in affective,

behavioural, and cognitive responses (Zanna & Rempel, 1988; Eagly & Chaiken, 1993). Therefore, attitudes need not be dealt with as just an affective subvariable within motivation, but need be treated separately on its own.

With respect to learners' language learning strategies, a large number of SLA studies have reported significant associations between learners' achievements, proficiency levels and their frequency use of certain learning strategies (Oxford, 1990; O'Malley & Chamot, 1990; Cohen & Weaver, 1998). In her study of patterns of language learning strategy use, conducted in a private language school in Auckland, New Zealand, using the Strategy Inventory of Language Learning (SILL), Griffiths (2003) found that a significant relationship between the use of certain strategies (among which strategies relating to interaction with others, to vocabulary, to reading, to the management of feelings, to the management of learning, and to the utilisation of available resources) and course level. Reporting parallel findings in her study, Gan (2004) reported positive, significant relations between learners' use of all language learning strategies and their language proficiency, cognitive learning and effort management displaying the highest correlation (statistic $r = .236$, $p < .01$).

Claiming that self-assessment is an attribute of successful autonomous (self-directed) learners which is a more critical skill, Rivers (2001), analysing self-directed behaviours of 11 successful adult third-language learners of Russian at the University of Maryland, indicated that:

> *"All learners were found to assess their progress, learning styles, learning preferences, and conflicts with teaching styles and with the behaviors of other learners regularly. Based on these assements, the majority of learners made attempts at specific*

self-directed learning behaviors, focused primarily on changes to course materials and classroom activities, and targeted specific learning tasks and strategies " (p. 279).

The participating EFL learners in our sample, reporting a high frequency use of metacognitive strategies and holding positive beliefs about their role as language learners, prove to recognise the importance of setting goals and objectives in their learning process, seeking their learning preferences, and evaluating their own progress (metacognitive awareness). It is reasonable to think that even though they are noticeably connected to second or foreign language instruction (consider the mean score for participating learners' attitude towards the teacher's role), they demonstrated a tendency towards autonomy, and that teachers are likely to have an influence on their self-sufficiency, self-confidence and to affect the development of their conceptions of themselves as adult students (Noel, 2001). Worth pointing out in our study is the negative, though non-significant, association between the participating learners' frequency use of strategies for social and cooperative learning and their level of achievement. Besides, they are negative, significant predictors of it. In this regard, we suggest that it is very expected that learners sense that there are learning situations from which they can ideally profit, and those learning contexts that suit entirely their learning style (Sternberg & Grigorenko, 2001). Within this vein, Riding and Raymer (1998) highlighted the impact of models of learning styles on learning strategies and their possible effects on successfully completing specific learning tasks. When learners become gradually cognisant of what suits them in their learning process, they begin to opt for their most suitable practices and strategies of learning, particularly when the element of choice is provided. This development in strategy selection, Riding and

Raymer (1998) argued, leads to assert "*that there is no right way to learn that applies equally to all individuals*" (p. 93).

It should be made quite explicit that language learners' attitudes, as psychological predispositions (affective, cognitive, behavioural), and strategies (as specific, conative responses within the learner to meet the demands of the learning environment), in self-directed language learning account considerably for students' language level of achievement, significantly predict their success, and characterise more successful learners from less successful ones. Learners' conceptions and beliefs about the language learning process (being the central and active part of it) correspond with their development of a repertoire of practices associated with their being strategic learners and the achievement of higher levels. Therefore, we believe that it is very likely that these processes are crucial to the common development of a purposeful approach to learning in general and language learning, in specific (Mori, 1999).

4. Conclusion

Though defining and operationalising attitudes and strategies in self-directed second or foreign language learning remain controversial and open to debate, our research findings shed a little more light on their importance to markedly account for language learners' success and failure. Furthermore, our research findings display considerable agreements with the current SLA research findings that second or foreign language learners' goals, beliefs, affect, and perceptions of the self determine their motivated behaviour (primarily language learning strategies) and, in turn, language achievement.

The findings yield the following specific conclusions:

a) *Research and statistical hypotheses*: both research hypotheses are actually confirmed and a number of answers are provided for our research questions. More specifically, our fourth statistical hypothesis, which assumes that the relationships of language achievement level to the reported measures of self-directed language learning attitudes and strategies are significant, and the correlations of the reported measures of attitudes with the level of achievement are more significant than for the other measures, is tested and confirmed at the conventional 95% confidence interval. The other five statistical hypotheses are, therefore, rejected.

b) *Attitudes towards confidence in abilities*: a learner's different perceptions (attitudes) of his or her own abilities and confidence in the self to study English with success lead to differences in his or her language learning behaviour, specifically his or her persistent efforts and strategies to reach a better achievement and a higher grade, and lead also to differences in conceptions of his or her own role within the language learning process. In addition, perceptions of the abilities of the self significantly distinguish between successful and less successful language learners, and reasonably contribute to their different achievements. As argued by Dembo (2004), "*Positive emotions foster your control over your learning, whereas negative emotions lead to more passive behaviour. Positive emotions predict high achievement, and negative emotions predict low achievement*" (p. 112).

c) *Attitudes towards the role of the learner:* a learner's positive conception of his or her role in the language learning process, being an active agent, entails a

specific predisposition to recognise the importance of initiative in language learning, support more learning independence, on the one hand, and, on the other, correlates positively with the learner's attempts to assess his or her progress, preferences, and to set learning goals and objectives. It is worth pointing out that, theoretically, such a subjective probability estimate (metacognitive awareness) of the importance of the self in language learning is, generally, a characteristic of adult learners, including language learners. Evident enough, such a belief is significantly associated with learners' persistent efforts and strategies to be successful language learners. Moreover, such a conceptualisation of the learner's own responsibility in the language learning process proves to significantly distinguish between successful and less successful students, that is, more successful learners (high achievers) hold more favourable attitudes towards exercising self-direction in language learning, and display a higher sense of responsibility.

d) *Attitudes towards initiative in learning:* as obviously displayed by the obtained results, learners' recognition of the importance of learning initiative and independence accounts for differences in their achievement, and correlates significantly with their conception of themselves as active learners.

e) *Metacognitive strategies:* being so widely acknowledged to contribute considerably to learners' achievement, controlling one's own learning processes, organising one's own learning problems, and assessing one's own weaknesses and strengths are at the very core of successful and proficient language learning. Zimmerman et al. (1996) argued that "*Goal*

setting and strategic planning occur when students analyze the learning task, set specific goals, and plan or refine the strategy to attain the goal" (p. 11). Such self-evaluating skills are necessary for any success in learning, in general. Obviously, a successful self-directed language learner is most probably constantly monitoring his or her language learning outcomes to determine whether different strategies are actually needed to attain goals and maintain a high level of achievment.

f) *Strategies for persistent learning:* it is clearly shown that a high level of language achievement is closely tied to learners' persistent learning behaviour and practices to study language by themselves. Therefore, we could certainly argue that trying hard and persisting until completion of the language learning task would contribute effectively to being a successful language learner.

5. Suggestions for Pedagogy and Future Research

Thus, our study findings have some general implications for second and foreign language teaching and learning. We suggest that teachers' awareness of their learners' positive attitudes towards autonomy in language learning could have a significant effect upon their approach to teaching, their practices, and their level of achievement. As an old proverb states: "*Give a man a fish and he eats for a day. Teach him how to fish and he eats for a life time*". Fostering learners' positive beliefs as independent learners, capable of achieving considerable success in language learning, does not show any incompatibility with teachers' role as guiders and facilitators whose main task is to lead the learners to the best ways and methods to effectively learn the language and have aims and plans to pursuit a long-lasting

learning process. In addition, classroom tasks and activities should be designed with the aim of assisting learners becoming independent and develop their metacognitive processes.

With regard to language learners' conceptions and beliefs about their role as the most effective part of the learning process, teachers should encourage learners to: a) take more responsibility of their learning process; b) be confident in their abilities to learn language successfully; c) view learning as a long-life process in which the individual should have clear objectives to achieve (i.e. learning takes place inside and outside the classroom); d) take more initiative in learning with active thinking and involvement; e) increase learners' awareness and disposition to exercise self-direction in learning; and f) make ongoing efforts and practices. Stated another way, teachers should encourage ownership in learning, that is, it is very essential that the language learners, actively, participate in the construction and completion of the learning task. By being responsible for one's own learning goals, objectives and the realisation of these aims, language learners' higher sense of involvement would be achieved (Johansson & Gärdenfors, 2005).

In regard to learning strategies, teachers should foster learners to: a) identify their needs and work efficiently with their respective instructors towards a better achievement of their goals; b) employ different resources independently of the instructor (books, tapes, dictionaries, etc.); c) set clear and specific learning objectives and goals to reach; and more importantly d) self-assess how successful learning has been after working on language learning tasks, and self-manage (or regulate) the social environment for one's own learning benefits. Rivers (2004) stated that:

"*The parallel between the attributes of successful autonomous/self-directed learners and executive function (metacognitive self-assessment and metacognitive self-management) is clear...Self-managed/self-directed learning requires the learner to assess accurately and to manage actively his or her learning goals, behaviors, environment, and outcomes*" (p. 280).

Again, our study findings have some other theoretical and methodological implications. We see the need to investigate the causal link between attitudes (as psychological predispositions to behave in certain ways) towards exercising self-direction in language learning and using learning strategies, being behavioural responses to the requirements of the learning task or situation (i.e. attitudes towards learning as causes of the use of learning strategies). Moreover, for there is, typically, no precise operational method to assess the causal link between attitudes and strategies (both being latent variables), and because of measurement potential errors, we suggest to test this theoretical causal model through the use of a statistical methodology used by many social, behavioural, and educational researchers: *structural equation modelling*. The characteristics of major structural equation models are that: a) they explicitly take into account the measurement error that is ubiquitous in most disciplines and contain latent variables; and b) they can be used to test the plausibility of hypothetical assertions about potential interrelationships among the constructs as well as their relationships. Jaccard and Blanton (2005) stated that:

"*Although* [structural] *causal models...often are associated with correlational or observational data, they apply with vigor to experimental data. Thinking about causal relationships between variables is not tied to a mode of data collection. Rather, it is a way of thinking about theoretical mechanisms*" (p. 158).

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APPENDICES

Appendix I

(For references on statistics, see Howell, 1997 and Rubinfeld, 2000)

Tests of Correlation

The Pearson product-moment test of correlation (statistic r) is used to compute the association between two variables or factors. To compute the Pearson product-moment correlation coefficient, the two variables should be specifically measured on the same person or case, be measured on an interval or ration scale, and be independent, i.e. any piece of information that corresponds to a case can only appear once.

The Pearson product-moment test of correlation allows the researcher to predict the direction of the alternative hypothesis that specifies the direction of the correlation between the measured variables. This type of tests is termed a 1-tailed test. Another type of tests that does not specify the direction of the alternative hypothesis is termed a 2-tailed test.

All correlation tests performed in our study are 2-tailed tests.

One-Way ANOVA, Completely Randomised One Variable Between Subjects Design

The Analysis of Variance (ANOVA) or, as it is often termed, the *F*-test, is just like a *t*-test. The latter cannot simultaneously test differences between more than two groups' means of a given sample, however, the ANOVA test is a statistical tool that allows the investigator to compare simultaneously more than two groups' means of a given sample, and avoid family wise error rate problem when running a series of *t*-tests.

The ANOVA is an omnibus test that tells the researcher where a significant effect is. The whole test is based upon the average (or mean) distance of the scores from the mean, which is what, actually, variance is. The ANOVA's entire aim is to determine whether variance in groups' means of a given sample drawn from any population is random (termed *error* variance or *within groups* variance) or is attributable to the action of the independent variable that is under investigation (termed *systematic* variance or *between groups* variance). Noteworthy, it is assumed that systematic variance contains, too, an unspecified error variance.

The ANOVA's test compares the two types of variances to establish any significant effect. If systematic (between groups) variance is significantly larger than the error (within groups) variance, the researcher is very likely to conclude that, clearly enough, something other than natural random differences are accounting for the differences between groups' means. This significant difference

in the groups' means is represented by the *F*-ratio (systematic variance/error variance).

As with any statistical tests, running an ANOVA's test requires a number of assumptions, so that the results could be valid. These assumptions are: a) the data should be measured on an interval or a ratio scale; b) the distribution of all variables should be normal, i.e. the data are parametric; c) the observations (scores) should be independent; d) homogeneity of variance, i.e. no variance should be four times bigger than another. Nevertheless, the ANOVA's test is robust to moderate violations from normality and homogeneity of the variance. Howell (1997) argued that "*In general, if the populations can be assumed to be symmetric, or at least similar in shape (e.g., all negatively skewed), and if the largest* [group or sample] *variance is no more than four times the smallest, the analysis of variance is most likely to be valid. It is important to note, however, that heterogeneity of variance and unequal sample sizes do not mix*" (p. 321).

All assumptions were checked and confirmed in our actual investigation.

Terminology

Variance: the average distance of scores from their centre (or the **M**ean **S**quare, MS).

$S^2 = \frac{\sum(x-\bar{x})^2}{N-1}$, this formula of variance is the basis of ANOVA.

$SS = \sum(x-\bar{x})^2$, numerator of formula (sum of squares).

df is the denominator of formula (the number of observations minus the number of estimated parameters is very useful in hypothesis testing).

$df_{sum} = N - 1$ or $df_{sum} = df_{effect} + df_{error}$ (N: the number of participants).

$df_{effect} = k - 1$ (k: the number of groups).

MS_{effect} is the varaince *between* groups.

MS_{error} is the variance *within* groups.

MS_{effect}/ MS_{error} ratio is the *F*-ratio (*F* for Fisher).

R-square (R^2) is a statistic that measures the percentage (or the magnitude of effect) of the variation in the dependent variable that is accounted for by the explanatory variables.

$$R^2 = \frac{SS_{effect}}{SS_{error}}, \text{(known as Eta-squared, } \eta^2)$$

$$\text{Adjusted } R^2 = \frac{SS_{effect} - (k-1)\,MS_{error}}{SS_{sum} + MS_{error}}, \text{(known as Omega-squared, } \omega^2)$$

The latter is a more conservative estimate, and is the most reported by researchers.

Tables of ANOVA tests

Attitudes

Effects of learners' attitudes towards confidence in abilities on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	5.07	2.00	2.54	5.95	0.00393
Within groups (A, B, C)	33.71	79.00	0.43		
Sum	38.79	81.00			

Effects of learners' attitudes towards the role of the learner on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	6.92	2.00	3.46	7.85	0.0008
Within groups (A, B, C)	34.84	79.00	0.44		
Sum	41.76	81.00			

Effects of learners' attitudes towards the role of the teacher on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	0.36	2.00	0.18	0.56	0.5761
Within groups (A, B, C)	25.36	79.00	0.32		
Sum	25.72	81.00			

Effects of learners' attitudes towards initiative in learning on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	6.68	2.00	3.34	7.11	0.00145
Within groups (A, B, C)	37.13	79.00	0.47		
Sum	43.82	81.00			

Strategies

Effects of learners' frequency use of cognitive strategies on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	1.00	2	0.50	2.00	0.1419
Within groups (A, B, C)	19.76	79	0.25		
Sum	20.76	81			

Effects of learners' frequency use of metacognitive strategies on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	1.54	2	0.77	2.96	0.0574
Within groups (A, B, C)	20.48	79	0.26		
Sum	22.02	81			

Effects of learners' frequency use of affective strategies on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	0.46	2	0.23	0.49	0.6169
Within groups (A, B, C)	37.15	79	0.47		
Sum	37.61	81			

Effects of learners' frequency use of social strategies on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	2.96	2	1.48	2.02	0.1398
Within groups (A, B, C)	57.85	79	0.73		
Sum	60.81	81			

Effects of learners' frequency use of strategies for persistent learning on their level of achievement.

Source of variation	SSq	df	MSq	F	p
Between groups (A, B, C)	8.82	2	4.41	9.34	0.0002
Within groups (A, B, C)	37.32	79	0.47		
Sum	46.14	81			

Multiple Regression Analysis

Multiple regression analysis (often termed multivariate regression) is a statistical tool used to understand the relationship between two or more variables. It involves a variable to be explained, termed the dependent variable, and additional explanatory variables that are thought to produce or be associated with changes in the dependent variable. Multiple regression is useful to determine whether a particular effect is present, measure the magnitude of a particular effect, and predict (forecast) what a particular effect would be. It is widely used by many researchers in human sciences as psychology, law, and economics (Rubinfeld, 2000).

Many software packages perform multiple regression analysis. They calculate the parameter estimates (the regression coefficients of the respective variables) and report the *p*-value that measures the observed significance level for each explanatory variable. The adjusted R^2 explains the magnitude of the effect of explanatory variables on the dependent variable, i.e. it explains the percentage accounted for by the explanatory variables in the variation of the dependent variable. Multiple regression analysis results are assumed to be, likely, very valid when correlations between the explanatory variables are far from perfect.

Terminology

Regression coefficient (regression parameter) is an estimate of a population parameter obtained from a regression equation that is based on a particular sample.

Regression residual is the difference between the actual value of a dependent variable and the value predicted by the regression equation.

Standard error of the regression (SER) is an estimate of the standard deviation of the regression error. It is calculated as an average of the squares of the residuals associated with a particular multiple regression analysis.

Some of the terminology enountered with the analysis of variance apply in the same way to the regression model as the numerator, the denominator, and degrees of freedom, with a few modifications.

In our study, there are nine explanatory variables, thus, the linear regression model takes the following form (regression equation):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \varepsilon$$

Where Y represents the level of achievement, X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9 represent the explanatory variables (i.e. ATCAB, ATRL, ATRT, ATINL, CS, MS,

AS, SS, and SPL), and β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, β_9 represent regression parameters (once calculated, they are called the regression coefficients) of each variable, respectively. The error term, ε, represents the collective unobservable influence of other non-included variables. β_0 is called the intercept, that is, the value of the dependent variable when all explanatory variables are equal to 0.

In respect with the R-square (R^2), the conservative estimate is as previously calculated. However, multiple R^2 is calculated differently as follows:

$$R^2 = \frac{SS_{effect}}{SS_{sum}}$$

Tables of Multiple Regression Analyses

Attitudes

Learners' attitudes relationships and their impact on their level of achievement

Source of variation	SSq	df	MSq	F	p
Due to regression	70.534	4	17.633	7.17	<0.0001
About regression	189.456	77	2.460		
Sum	259.989	81			

SER = 1.57

Strategies

Learners' attitudes relationships and their impact on their level of achievement

Source of variation	SSq	df	MSq	F	p
Due to regression	71.814	5	14.363	5.80	0.0001
About regression	188.176	76	2.476		
Sum	259.989	81			

SER = 1.58

Attitudes and Strategies

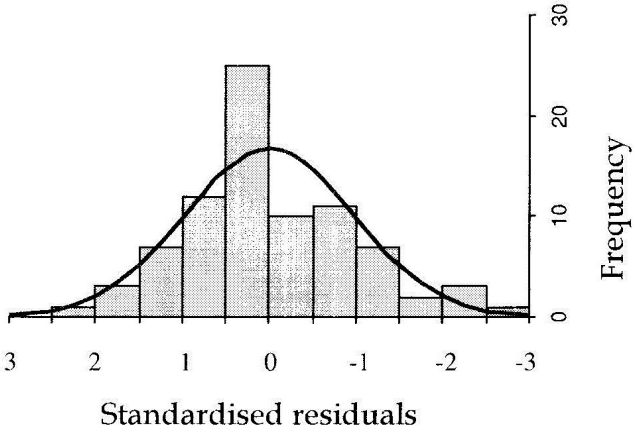
Learners' attitudes relationships and their impact on their level of achievement

Source of variation	SSq	df	MSq	F	p
Due to regression	100.202	9	11.134	5.02	<0.0001
About regression	159.788	72	2.219		
Sum	259.989	81			

SER = 1.49

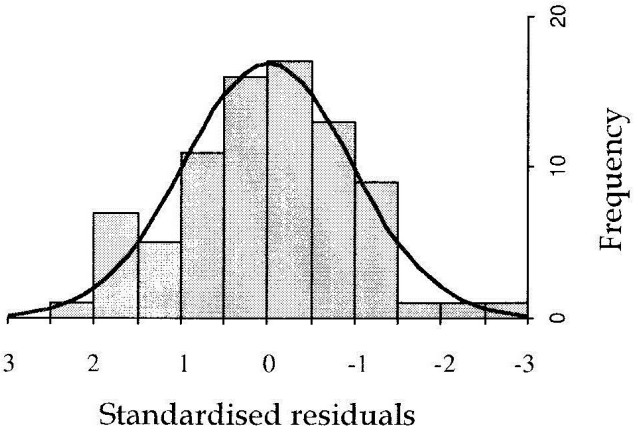
Standardised Residuals Graphs.

Attitudes



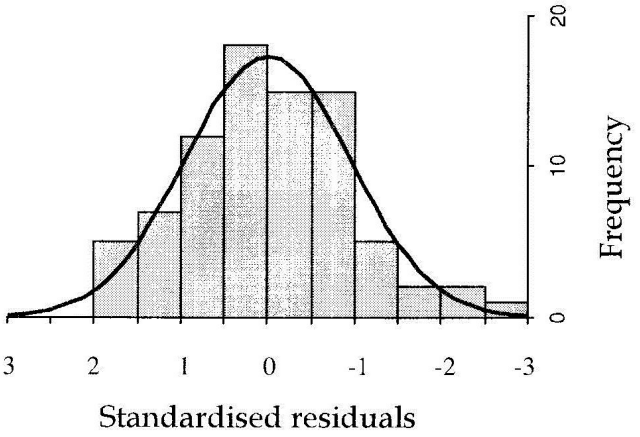
N = 82
R^2 = 0.27
Adjusted R^2 = 0.23
SER = 1.57

Strategies



N = 82
R^2 = 0.28
Adjusted R^2 = 0.23
SER = 1.58

Attitudes and Strategies



N = 82
R^2 = 0.39
Adjusted R^2 = 0.31
SER = 1.49

Appendix II

The Pilot Questionnaire

Our research questionnaire is shown below as originally administered to the participating learners. The items in the pilot questionnaire, representing the various attitudinal factors and the learning strategies, are not listed systematically, and appear as follows:

Attitudes towards self-directed English language learning

a) Attitudes towards confidence in abilities (1, 2, 3, 4,)
b) Attitudes towards the role of the learner (5, 11, 12, 13)
c) Attitudes towards the role of the teacher (6, 7, 8, 9, 10)
d) Attitudes towards initiative in learning (14, 15)

Strategies in self-directed learning of English

a) Cognitive strategies (1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15)
b) Metacognitive strategies (3, 13, 16, 17, 18, 19, 23, 26, 29)
c) Affective strategies (8, 24, 27, 28)
d) Social strategies (20, 21, 22, 25)
e) Strategies for persistent learning (30, 31, 32)

Questionnaire

Dear learners, you are invited to complete a questionnaire about your attitudes towards *self-directed (i.e. autonomous) learning of English language* and about *learning strategies*, which you use in your own learning of English. We assure you that your answers would be kept strictly confidential and would be used only for research purposes. Please, read the statements attentively and respond to them by circling the appropriate number (1, 2, 3, 4 or 5) that tells how much you agree or disagree with the statement in **Part A**, and how much the statement is true of you in **Part B**.

Do not answer how you think you should be, or what other people do. There are no wrong or right answers to these statements. It will take you about 20 minutes to complete the questionnaire. If you have any questions, let your teacher know immediately.

Part A

Strongly agree →	**5**
Agree	**4**
Neither disagree nor agree	**3**
Disagree →	**2**
Strongly disagree	**1**

For instance,

a. If I **strongly agree** that '*It is important for me to participate actively in class*', I should circle 5 next to the statement.

It is important for me to participate actively in class. 1 2 3 4 (5)

b. If I **disagree** that '*It is important for me to participate actively in class*', I should circle 2 next to the statement.

It is important for me to participate actively in class. 1 (2) 3 4 5

Part B

Always	**5**
Usually →	**4**
Often	**3**
Seldom (rarely)	**2**
Never →	**1**

For instance,

a. If I **usually** '*listen to music tapes to be familiar with English accents*', I should circle 4 next to the statement.

I listen to music tapes to be familiar with English accents. 1 2 3 (4) 5

b. If I **never** '*listen to music tapes to be familiar with English accents*', I should circle 1 next to the statement.

I listen to music tapes to be familiar with English accents. (1) 2 3 4 5

Part A

1. I know how to find my own style of learning English.	1	2	3	4	5
2. I feel I have a good idea of how well I am doing in English.	1	2	3	4	5
3. I feel confident about my abilities to study English with success.	1	2	3	4	5
4. I know which aspects of my English I have to improve.	1	2	3	4	5
5. What I do outside the classroom is essential to achieve a good grade in English.	1	2	3	4	5
6. To learn English with success, it is important for me to finish my tasks and assignments.	1	2	3	4	5
7. To learn English with success, it is important for me to attend (do not be absent) all classes.	1	2	3	4	5
8. To learn English with success, it is important for me to use textbooks.	1	2	3	4	5
9. The best way to learn English for me is mostly in the classroom from the teacher.	1	2	3	4	5
10. It is important for me that my teacher should evaluate my assignments regularly.	1	2	3	4	5
11. To learn English with success, it is important for me to carry out my own learning.	1	2	3	4	5
12. To learn English with success, it is important for me to evaluate my own learning.	1	2	3	4	5
13. To learn English with success, it is important for me to use learning resources outside the classroom.	1	2	3	4	5
14. To learn English with success, it is important for me to be given a lot of choices in class.	1	2	3	4	5
15. It is important for me to participate actively in class.	1	2	3	4	5

Strongly agree	**5**
Agree	**4**
Neither disagree nor agree	**3**
Disagree	**2**
Strongly disagree	**1**

Part B

1. I use new English words in a sentence so I can remember them.	1	2	3	4	5
2. I remember new English words or phrases by remembering their location on the page, board, etc.	1	2	3	4	5
3. I notice my English mistakes and use that piece of information to help me do better.	1	2	3	4	5
4. I memorise new English words by saying or writing them repeatedly.	1	2	3	4	5
5. I listen carefully to native speakers and try to imitate them.	1	2	3	4	5
6. I use the English words I know in different contexts.	1	2	3	4	5
7. I enunciate (articulate clearly) English sounds, syllables, and words to improve my pronunciation.	1	2	3	4	5
8. I write letters, diaries (daily records of personal experiences), or reports in English.	1	2	3	4	5
9. I summarise what I read in English, or what I hear in conversations.	1	2	3	4	5
10. I listen to music tapes to be familiar with English accents.	1	2	3	4	5
11. I listen to different English tapes to learn new English words.	1	2	3	4	5
12. I make guesses to understand new English words that I do not understand.	1	2	3	4	5
13. I select my own English dictionary to use in my learning.	1	2	3	4	5
14. I use translation whenever the English word is very difficult for me to understand.	1	2	3	4	5
15. I guess meaning of the English word I do not know by dividing it into parts that I understand.	1	2	3	4	5

Always	**5**
Usually	**4**
Often	**3**
Seldom (rarely)	**2**
Never	**1**

16. I try to find how to be a better learner of English.	1	2	3	4	5
17. I plan to listen first to standard English and then to non-standard English.	1	2	3	4	5
18. I plan to concentrate on speaking with no hesitation (fluency) over correctness.	1	2	3	4	5
19. I plan to improve my writing skill.	1	2	3	4	5
20. I work with my classmates (friends in class) to revise my lessons after class.	1	2	3	4	5
21. I work with my classmates to practice how to study novels.	1	2	3	4	5
22. I talk to my classmates in English even when I am outside the classroom.	1	2	3	4	5
23. I create situations to practice my English with my classmates and friends.	1	2	3	4	5
24. I encourage myself to speak English with others even if I feel afraid of making mistakes.	1	2	3	4	5
25. I ask my teacher for help when I have problems in English learning.	1	2	3	4	5
26. When I perform poorly on an English test, I try to learn from my mistakes.	1	2	3	4	5
27. I talk to myself in English outside the classroom.	1	2	3	4	5
28. I give myself a treat when I perform well on an English test.	1	2	3	4	5
29. I think about whether I am making a progress in learning English.	1	2	3	4	5
30. I prepare in advance my lessons on my own initiative (without being asked for).	1	2	3	4	5
31. I keep working until I finish the task at hand even when it is boring.	1	2	3	4	5
32. I spend time improving my English even if I am not required to do so by the teacher.	1	2	3	4	5

Always	**5**
Usually	**4**
Often	**3**
Seldom (rarely)	**2**
Never	**1**

Appendix III

The Research Questionnaire

Our research questionnaire is shown below as originally administered to the participating learners. The items in the research questionnaire, representing the various attitudinal factors and the learning strategies, are not listed systematically, and appear as follows:

Attitudes towards self-directed English language learning

a) Attitudes towards confidence in abilities (1, 2, 3, 4)
b) Attitudes towards the role of the learner (5, 9, 11, 14, 15, 16, 17)
c) Attitudes towards the role of the teacher (6, 7, 8, 12, 13)
d) Attitudes towards initiative in learning (10, 18, 19, 20, 21)

Strategies in self-directed learning of English

a) Cognitive strategies (1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 16, 18)
b) Metacognitive strategies (4, 10, 15, 19, 20, 21, 22, 23, 27, 30, 34)
c) Affective strategies (9, 17, 28, 32, 33)
d) Social strategies (24, 25, 26, 29)
e) Strategies for persistent learning (31, 35, 36, 37)

Questionnaire

Dear learners, you are requested to complete a questionnaire about your attitudes towards *self-directed (i.e. autonomous) learning of English language* and about *learning strategies*, which you use in your own learning of English. We assure you that your answers would be kept strictly confidential and would be used only for research purposes. Please, read the statements attentively and respond to them by circling the appropriate number (1, 2, 3, 4 or 5) that tells how much you agree or disagree with the statement in **Part A**, and how much the statement is true of you in **Part B**.

Do not answer how you think you should be, or what other people do. There are no wrong or right answers to these statements. It will take you about 30 minutes to complete the questionnaire. If you have any questions, let your teacher know immediately.

Finally, we owe you much of our appreciation and gratitude.

Part A

Strongly agree →	**5**
Agree	**4**
Neither disagree nor agree	**3**
Disagree →	**2**
Strongly disagree	**1**

For instance,

a. If I **strongly agree** that '*It is important for me to participate actively in class*', I should circle 5 next to the statement.

It is important for me to participate actively in class. 1 2 3 4 (5)

b. If I **disagree** that '*It is important for me to participate actively in class*', I should circle 2 next to the statement.

It is important for me to participate actively in class. 1 (2) 3 4 5

Part B

Always	**5**
Usually →	**4**
Often	**3**
Seldom (rarely)	**2**
Never →	**1**

For instance,

a. If I **usually** '*listen to music tapes to be familiar with English accents*', I should circle 4 next to the statement.

I listen to music tapes to be familiar with English accents. 1 2 3 (4) 5

b. If I **never** '*listen to music tapes to be familiar with English accents*', I should circle 1 next to the statement.

I listen to music tapes to be familiar with English accents. (1) 2 3 4 5

Part A

1. I know how to find my own style of learning English.	1	2	3	4	5
2. I feel I have a good idea of how well I am doing in English.	1	2	3	4	5
3. I feel confident about my abilities to study English with success.	1	2	3	4	5
4. I know which skills (speaking, listening, reading or writing) of my English I have to improve.	1	2	3	4	5
5. My learning efforts outside the classroom are necessary for me to have good marks in my tests.	1	2	3	4	5
6. To learn English with success, it is important for me to finish my tasks and assignments.	1	2	3	4	5
7. To learn English with success, it is important for me to attend (do not be absent) all classes.	1	2	3	4	5
8. To learn English with success, it is important for me to use classroom textbooks.	1	2	3	4	5
9. To learn English with success, it is important for me to listen to storytellers (stories on audio tapes).	1	2	3	4	5
10. To learn English with success, it is very important for me to listen to BBC radio.	1	2	3	4	5
11. I can learn more English through my free study than through attending classes.	1	2	3	4	5
12. The best way to learn English for me is mostly in the classroom from the teacher.	1	2	3	4	5
13. It is important for me that my teacher should evaluate my assignments regularly.	1	2	3	4	5
14. To learn English with success, it is important for me to organise my own learning.	1	2	3	4	5
15. To learn English with success, it is important for me to carry out my own learning.	1	2	3	4	5
16. To learn English with success, it is important for me to evaluate my own learning.	1	2	3	4	5
17. To learn English with success, it is important for me to borrow books from the library.	1	2	3	4	5
18. It is important for me to propose topics for discussion in oral expression class.	1	2	3	4	5
19. It is important for me to participate actively in class.	1	2	3	4	5
20. It is important for me to propose topics to write about in written expression class.	1	2	3	4	5
21. It is important for me to ask my teacher for a supplementary class.	1	2	3	4	5

Strongly agree	**5**
Agree	**4**
Neither disagree nor agree	**3**
Disagree	**2**
Strongly disagree	**1**

Please, indicate your degree of agreement, disagreement or unresponsiveness to each statement by circling the appropriate number.
(cf. examples of answers to statements on page 1)

Part B

1. I use new English words in a sentence so I can remember them.	1	2	3	4	5
2. I remember new English words or phrases by remembering their location on the page, board, etc.	1	2	3	4	5
3. I use rhymes (as in poetry) to remember new English words.	1	2	3	4	5
4. I notice my English mistakes and use that piece of information to help me do better.	1	2	3	4	5
5. I memorise new English words by saying or writing them repeatedly.	1	2	3	4	5
6. I listen carefully to native speakers and try to imitate them.	1	2	3	4	5
7. I use the English words I know in different contexts.	1	2	3	4	5
8. I enunciate (articulate clearly) English sounds, syllables, and words to improve my pronunciation.	1	2	3	4	5
9. I write letters, diaries (daily records of personal experiences), or reports in English.	1	2	3	4	5
10. I choose English novels and books to read.	1	2	3	4	5
11. I summarise what I read in English, or what I hear in conversations.	1	2	3	4	5
12. I listen to music tapes to be familiar with English accents.	1	2	3	4	5
13. I listen to different English tapes to learn new English words.	1	2	3	4	5
14. I make guesses to understand new English words that I do not understand.	1	2	3	4	5
15. I select my own English dictionary to use in my learning.	1	2	3	4	5
16. I use translation whenever the English word is very difficult for me to understand.	1	2	3	4	5
17. I try not to use translation word-for-word.	1	2	3	4	5
18. I guess meaning of the English word I do not know by dividing it into parts that I understand.	1	2	3	4	5

Always	**5**
Usually	**4**
Often	**3**
Seldom (rarely)	**2**
Never	**1**

Please, indicate how much the statement is true of you by circling the appropriate number.
(cf. examples of answers to statements on page 1)

19. I try to find how to be a better learner of English.	1	2	3	4	5
20. I make a plan to follow in order to read some books, novels, and poems.	1	2	3	4	5
21. I plan to listen first to standard English and then to non-standard English.	1	2	3	4	5
22. I plan to concentrate on speaking with no hesitation (fluency) over correctness.	1	2	3	4	5
23. I plan to improve my writing skill.	1	2	3	4	5
24. I work with my classmates (friends in class) to revise my lessons after class.	1	2	3	4	5
25. I work with my classmates to practice how to study novels.	1	2	3	4	5
26. I talk to my classmates in English even when I am outside the classroom.	1	2	3	4	5
27. I create situations to practice my English with my classmates and friends.	1	2	3	4	5
28. I encourage myself to speak English with others even if I feel afraid of making mistakes.	1	2	3	4	5
29. I ask my teacher for help when I have problems in English learning.	1	2	3	4	5
30. When I perform poorly on an English test, I try to learn from my mistakes.	1	2	3	4	5
31. I watch English TV films and programmes.	1	2	3	4	5
32. I talk to myself in English outside the classroom.	1	2	3	4	5
33. I give myself a reward when I perform well on an English test (when I have a good mark).	1	2	3	4	5
34. I think about whether I am making a progress in learning English.	1	2	3	4	5
35. I prepare in advance my lessons on my own initiative (without being asked for).	1	2	3	4	5
36. I keep working until I finish the task at hand even when it is boring.	1	2	3	4	5
37. I spend time improving my English even if I am not required to do so by the teacher.	1	2	3	4	5

Always	**5**
Usually	**4**
Often	**3**
Seldom (rarely)	**2**
Never	**1**

Please, indicate how much the statement is true of you by circling the appropriate number.
(cf. examples of answers to statements on page 1)

الملـــــــخص

إن تطور مفهوم التعلم من اكتساب الفرد لسلوك معين نتيجة لتدريب معين إلى سيرورة اكتساب معارف مختلفة يكون فيها الفرد المتعلم هو العامل الرئيسي في ذلك قد غـــيّر مجموعة من المفاهيم و التطبيقات المعمول بهما في مجال التعليم. فاعتبار الفرد المتعلم المسؤول الرئيسي عن سيرورة التعلم زادت في انتشار مفهوم التعلم الذاتي و استراتيجيات هذا الأخير التي تسهم كثيرا بقدر كبير من التحصيل العلمي و الأكاديمي. لكن اختلاف المواقف و التوجهات نحو التعلم الذاتي قد ينتج عنه تباين في سلوك (استراتيجيات) الفرد المتعلم قد يؤثر فيه إلى حد كبير على مستوى تحصيله العلمي و الأكاديمي.

إن دراستنا هذه باعتبارها إحدى التطبيقات لهذين المفهومين (التوجه و السلوك) في مجال التحصيل اللغوي (اللغات الأجنبية) لطلبة السنة الثانية لغة إنجليزية (نظام LMD) بجامعة منتوري، قسنطينة، بينت لنا مدى الارتباط المعنوي الموجب بين توجه الطالب (الذي يتجسد في ثقته في قدراته الفردية على تعلم اللغة الإنجليزية، قابليته لتحمل مسؤوليته كأهم طرف في سيرورة تعلم اللغة الانجليزية، و إقرار أهمية المبادرة الفردية في تعلم الإنجليزية كلغة) نحو التعلم الذاتي و مستوى تحصيله اللغوي من جهة، و من جهة أخرى بينت لنا مدى الارتباط المعنوي الموجب بين سلوك (استراتيجيات) الطالب و مستوى تحصيله اللغوي. كما بينت دراستنا مجال ارتباط معنوي موجب بين توجهات (مواقف) الطالب و استراتيجياته المستعملة لتحصيل أكبر قدر من التعلم.

Résumé

Dans la présente étude, l'apprentissage autonome et les stratégies d'apprentissage sont considérés comme deux composants d'une forme d'apprentissage idéal et continu. Cette forme d'apprentissage reflète, à vrai dire, un changement majeur dans la conceptualisation des différents rôles de l'enseignant et l'étudiant.

En utilisant un questionnaire de deux parties pour instrument de recherche (une partie sur les attitudes et l'autre sur les stratégies d'apprentissage, ayant pour échelle de mesure, l'échelle de Likert), les résultats de notre recherche montrent une tendance générale des étudiants de la deuxième année d'anglais (système LMD), pris comme échantillon représentatif de la population cible à l'Université MENTOURI de Constantine, à soutenir l'apprentissage autonome, et à utiliser les différentes stratégies d'apprentissage, aux fréquences différentes. Notre étude montre aussi que la perception des étudiants de leurs capacités et leur confiance en soi, la conception de leur rôle (étant un élément actif), et l'importance de l'initiative personnelle dans l'apprentissage corrèlent positivement et significativement avec leur niveau d'accomplissement, excepté leur conception du rôle de l'enseignant qui montre une corrélation positive mais non significative. En parallèle, seules les stratégies métacognitives et les stratégies d'apprentissage persistant montrent une corrélation positive et significative avec le niveau d'accomplissement des étudiants. De plus, la conception des étudiants de leur rôle et leur perception de l'importance de l'initiative personnelle corrèlent positivement et significativement avec leur usage des stratégies métacognitives et stratégies d'apprentissage constant.