THE EFFECTS OF APTITUDE AND MOTIVATION ON THE ACQUISITION OF EFL IN YOUNG LEARNERS

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Barcelona, 2011
ABSTRACT

Aptitude and Motivation are two individual differences widely explored in the literature, but they have rarely been explored at the primary school stage of learning. The present study aimed at covering this gap. The purpose of the study was to check to what extent the two variables were good indicators of success in EFL and what the relationship between them is. The participants were forty-eight 5th grade students in a middle class school with an ordinary EFL program in the area of Barcelona. The instruments used were the MLAT-ES (to measure Aptitude) and the attitudes section of the FLAGS questionnaire (to measure Motivation). To consider proficiency, tests of listening, reading and writing were designed. The correlations carried out showed that both factors were strong predictors of EFL achievement, although Aptitude was a much stronger predictor than Motivation. The results of multiple regression analysis showed that, together, Aptitude and Motivation explained 61.8% of the variance in performance. This finding was in consonance with previous studies. However, no significant relationship was found between Motivation and Aptitude, contrary to some prior studies.
The Effects of Aptitude and Motivation on the Acquisition of EFL in Young Learners

TABLE OF CONTENTS

1. Introduction .............................. 5
2. Literature review
   - Aptitude .............................. 5
   - Motivation ........................... 10
   - Aptitude and Motivation .......... 15
3. Method
   3.1. Participants ......................... 19
   3.2. Instruments
     3.2.1. Aptitude ......................... 19
     3.2.2. Motivation ....................... 19
     3.2.3. FL proficiency .................. 20
     3.2.4. Analysis of instruments .......... 20
   3.3. Research questions ................ 21
   3.4. Procedure .......................... 21
4. Results
   4.1. Analysis ............................ 23
   4.2. Correlations ........................ 23
   4.3. Multiple regression analysis .. 24
5. Discussion and conclusions ............. 26
6. References ............................... 32
7. Appendices
   - Appendix A. Consent letter (in Catalan) 34
   - Appendix B. Attitudes section of the FLAGS questionnaire 35
   - Appendix C. Listening and reading tests. 38
List of figures and tables

Figure 1: Interrelationship of the Motivational Variables and the Criterion Measures, from Dörnyei and Csizér (2005) 12

Figure 2: Basic model of the role of aptitude and motivation in second language learning, from Gardner (2001) 16

Table 1: Proficiency, Motivation and Aptitude Correlations 24

Table 2: Subcomponents of proficiency correlations 25

Table 3: Subtests of the MLAT correlations 27

Table 4: Standard multiple regression analysis (Independent variables: aptitude and motivation) 28
1. INTRODUCTION

Nowadays, it is a very common practice in schools to start EFL programs as soon as possible. In Catalonia, many schools start teaching English in infant education, when children are four or five years old. Most research has focused on secondary or adult participants to consider different issues in FLA, but fewer are the studies which have dealt with primary schools participants, who may shed some light on the topic as they may have been learning English for several years in their short lives, and are somewhere half-way in their process of acquisition of EFL.

Aptitude and motivation have been considered two of the most valuable predictors of success in EFL, but again, little research has been conducted at the primary stage of learning. More studies in this direction may help us understand how their acquisition process works and may, consequently, help us develop and improve EFL programmes.

2. LITERATURE REVIEW

Aptitude

Language Aptitude has been defined as the capability of learning a task...which depends on some combination of more or less enduring characteristics of the learner (Carrol, 1981, p. 84) or the special propensity for learning an L2 (Ellis, 1994, p. 494). As Kiss and Nikolov (2005) point out, the definition of Aptitude is based on four assumptions:

1. There is a talent for languages different from general cognitive abilities
2. Aptitude is relatively stable
3. It is not a prerequisite for L2 acquisition but a capacity that enhances the rate and ease of learning
4. It is composed by different characteristics

Skehan (1986) examined the relationship between language acquisition, language aptitude and second language learning and found that aptitude tests were
good predictors of FL learning. He concluded that aptitude tests were effective predictors because they measured language processing ability and the capacity to handle decontextualized material, and, according to Skehan, these two components are crucial for language learning success.

Different tests have been used to measure Aptitude, such as the Psi-Lambda Foreign Language Battery by Carroll, in the 50’s, the Pimsleur Language Aptitude Battery, PLAB, by Pimsleur in 1966, or the Defense Language Aptitude Battery, DLAB, by Petersen & Al-Haik in 1976. However, the most widely used and accepted is the Modern Language Aptitude Test (MLAT) developed by Carrol and Sapon. The MLAT covers four components:

- Phonetic coding ability: the ability to identify distinct sounds, to form associations between these sounds and symbols representing them, and to retain these associations
- Grammatical sensitivity: the ability to recognize the grammatical functions of words in sentence structures
- Rote learning memory for FoL materials: the ability to learn associations between sounds and meanings rapidly and efficiently, and to retain these associations
- Inductive language learning ability: the ability to infer or induce the rules governing a set of language materials, given samples of language materials that permit such inferences.

These components are covered in the five parts of the test:

- Part 1. *Number Learning*. This part measures rote memory and auditory alertness. In this subtest the names of numbers are taught in an artificial language.
- Part 2. *Phonetic Script*. This part is designed to measure sound-symbol association ability.
• Part 3. *Spelling Clues*. In this subtest the correct synonym of a disguised word has to be selected from the five choices suggested. This part deals with sound-symbol association ability, and the results depend on the test taker’s vocabulary knowledge.

• Part 4. *Words in Sentences*. It is intended to measure grammatical sensitivity. In this subtest subjects have to identify which of the components underlined in one sentence corresponds to the highlighted element in another sentence in terms of grammatical function.

• Part 5. *Paired Associates*. This part is designed to measure associative rote memory. The test taker must memorize as many words in Kurdish as possible; these words are presented with their English equivalents.

Carrol and Sapon also developed a version of the MLAT for younger students (grades 3 to 6), the *MLAT-Elementary* (MLAT-E). This adaptation consists of four parts, three of which correspond to the ones in the MLAT. These parts are:

• Part 1: *Hidden Words*. This part corresponds to *Spelling Clues* of the MLAT, but presents less difficult vocabulary. It measures not only knowledge of the English vocabulary, but also sound-symbol association ability. *Phonetic Script* was not retained in the MLAT-E because it was found to be too difficult.

• Part 2. *Matching Words*. This was called *Words in Sentences* in the MLAT. Although it is designed to measure sensitivity to grammatical structure, the terminology of formal grammar is not used.

• Part 3. *Finding Rhymes*. This part was not in the MLAT. It is designed to measure the ability to hear speech sounds by asking the examinee to select words that rhyme.

• Part 4. *Number Learning*. As in the MLAT, the test taker learns the names of numbers in an artificial language, and after some practice in recognition and in putting numbers together, the test taker listens to 25 numbers in the new language and writes them down. This part aims to measure the rote memory component.
The MLAT has been used in a variety of contexts over the years since its design, in the early 60’s. Its main use has been, as Suárez (2010, p.116) states: the prediction of any individual’s success in learning a FL in a given amount of time and under given conditions. The test has been administered in different teaching methodology contexts (oral-work oriented and grammar-oriented), although it should be pointed out that these piloting took place more than 50 years ago, and teaching methodology has evolved and changed since then. However, the MLAT has been used and validated since its creation. It was found to be a good predictor for success in Carroll’s unpublished studies (1981) in form-oriented classrooms. Gardner and Lambert (1959) also used the MLAT in French classes in the US together with other tests and found that aptitude (and especially the Words in Sentences part) and an IQ factor were strong predictors of achievement. Bialystok and Fröhlich (1978) found that the Words in Sentences subtest was responsible for most of the variance on the grammar and reading tests, but not so much on the listening test. Ranta (2002) used the MLAT in communicative classrooms and found that high verbal analytical ability was also useful for grade 6 students in communicative learning programmes.

Horwitz (1987) used the MLAT in relation to communicative competence and grammatical competence. She found that the Words in Sentences part correlated significantly with the grammar test as did the social cognitive abilities tests with communicative competence. However, similar correlations were found between aptitude and communicative competence, and between social cognitive abilities and grammatical competence.

In the 90’s Carroll defended the MLAT as a good tool for predicting aptitude, and continued stating the importance of cognitive abilities and aptitude in FL learning. Several studies during the 90’s supported these claims (Sparks, Ganschow, & Patton, 1995; Sparks, Ganschow, Patton, Artzer, et al., 1997, in Sparks and Ganschow, 2001, p.96), finding that the MLAT is an important predictor of FL achievement after one and two years of study. Other studies also showed, as Sparks and Ganschow (2001, p. 96) argued, that good FL learners have significantly stronger FL aptitude on the MLAT than poor FL learners (Sparks, Ganschow, Javorsky, Pohlman, & Patton, 1992).
Ehrman and Oxford (1995) also stood for the validity of the MLAT regardless of the changes in teaching methodology. Although the test had been created in the context of audiolingual teaching methodology, they found strong correlations between their participants’ proficiency and aptitude as measured by the MLAT, already in the context of communicative teaching methodology (the mid 90’s). They argued that despite the changes the MLAT continues to correlate with overall learning success at more or less the same levels (Ehrman and Oxford, 1995, p. 77).

Suárez (2010) administered the MLAT-ES, translated and adapted it into Catalan to create the Catalan version (MLAT-EC). She administered the test to 629 participants of an age range from 8.3 to 14.9 years old. Regarding age and aptitude results, she found an increase in the means between grades 3 and 4, which was always higher than the increase between grades 4 and 6. She also found that the results seemed to reach a plateau between grades 6 and 7. With respect to the relation between proficiency and aptitude, Suárez collected two kinds of data: English marks (provided by the teachers) and some proficiency measures (a listening test and cloze passage in all grades, in addition to a dictation in grades 5 to 7). When considering the marks, she concluded that the correlations were from low (considering all grades together) to moderate, being all of them statistically significant except in grade 3. Regarding the measures of proficiency, the cloze (considered to be an integrative measure of FL proficiency) correlated mostly with all parts in the MLAT except in some specific cases. The listening measure obtained significant moderate correlations with all parts when considering the grades together. The last measure, the dictation, correlated significantly with the four parts of the MLAT in grades 5, 6 and 7 separately and all together, except in some cases. All this led her to conclude that, despite the exceptions and small inconsistencies in the correlations, the best predictor of proficiency was the total score of the MLAT.

The MLAT has also been used in schools for diagnosis to match or group FL learners in FL programmes or to spot FL learning disabilities (FLLDs). This use of the test has been subject to criticism. Goodman and Freed & McManus (1990) argued that a low score in the MLAT should not be the reason to exclude a student from a FL
programme, as it may be overcome by an extra effort to learn the FL. Sparks, Javorsky and Ganschow (2005) also express their disagreement with the use of the MLAT to diagnose FLLDs. They claim that this disability may be due to a lack of L1 mastery and cognitive skills and not to a low aptitude. They also point out that Carroll model of school learning also considers instruction effects, individual differences, intelligence and motivation, apart from aptitude.

Other criticisms towards the MLAT include being outdated (Sparks, Javorksy and Ganschow, 2005) and not having an alternative version, something that Carroll himself regretted. Carroll (1990) also mentioned that the Phonetic Script part could be complemented with other tests, such as intellectual ability or phonetic material tests. He also stated that Paired Associates should not be considered as a measure of general memory but only rote-learning ability. Another factor that shapes aptitude and is not measured as such in the MLAT is inductive language learning ability that is present weakly in the Number Learning subtest. Other researchers (Ellis 1986) have suggested that the MLAT only predicts reading and writing skills and not speaking. This was confirmed by Brecht, Davidson and Ginsberg (1993, 1995 in Ehrman, 1998) who did not find the MLAT a good predictor of oral proficiency (but it was a good predictor of reading proficiency).

To conclude, as Suárez (2010, p.120) states, the MLAT is a powerful measure on its own though it should not be used as the only measure but along with other measures such as FL or L1 assessments or the FL learning history of the learner. Suárez also recommends that we should always bear in mind not the total score, but the scores obtained in each subpart as well as the relationship these scores establish with the instructional context and, naturally, other FL IDs such as age, motivation, anxiety, learning styles, learning strategies and personality.

Motivation

Another factor which has been considered a good predictor of proficiency is
motivation. Motivation has been approached from different perspectives and with different conceptualizations. The traditional dichotomies distinguish between instrumental or integrative motivation, on the one hand, and extrinsic or intrinsic motivation, on the other hand. Instrumental motivation is linked to job and career interests, while integrative is associated with values to the goal society and socio-cultural interests. With respect to the second dichotomy, extrinsic motivation refers to external forces (good marks, punishments, rewards) whereas intrinsic motivation makes reference to a personal interest within the individual.

Following social psychology, the most influential model comprising motivation has been Gardner’s (a revised version of which is detailed in the next section). According to this model, there is a specific motivation for language learning, and it is formed by three main factors: wish to learn, attitudes and effort. These factors were reflected in the design of the *Attitude Motivation Test Battery* (AMTB), a questionnaire designed by Gardner to calculate the intensity of motivation in language learning students. Influential as it may have been, Gardner’s model has also undergone criticisms. Dörnyei (1994), although acknowledging the importance and contribution of the model, called for a *more pragmatic, education-centred approach to motivation, consistent with the perceptions of practising teachers and in line with the current results of mainstream educational psychological research* (p.273). Dörnyei argued that, although Gardner’s model included an educational dimension its main emphasis was on social components and not in the foreign language classroom. An additional criticism by Dörnyei was that Gardner’s construct did not include details on cognitive aspects of motivation to learn. For these reasons, Dörnyei and Csizér (2005) proposed a new model of the internal structure of motivation elaborating on data from over 8500 Hungarian 13-14 years old students. Using the SEM (*Structural Equation Modeling*) statistical procedure, which allowed them to find out the directional paths between the variables, they considered seven components of L2 motivation: *Integrativeness, Instrumentality, Vitality of the L2 community, Attitudes towards the L2 speakers, Cultural Interest, Linguistic Self-Confidence and Milieu*. The resulting model,
which combined these components in relation to Intended Effort and Language Choice, placed Integrativeness in a central position, although broadening Gardner’s concept.

According to this model, Instrumentality was not only complementing Integrativeness, but also feeding it. Instrumentality, for its part, was affected by Milieu directly and indirectly. They also found a direct link between Vitality of L2 community and Attitudes towards L2 speakers. Self-Confidence was linked to Milieu directly, and had relationship with Attitudes towards L2 speakers through Cultural Interest. For more details on the model see figure 1. It should be stressed that Dörnyei and Csizér related the motivational factors not to L2 outcome measures, but to criterion measures linked with L2 behaviour. They followed this reasoning because they argued that motivation is only indirectly related to learning outcomes because it is, by definition, an antecedent of behaviour rather than of achievement. (Dörnyei and Csizér, 2005, p.20).
Following the second dichotomy, research has proved that extrinsic and intrinsic motivation should not be considered diametrical opposites but rather ends on a continuum (Dörnyei 1994, Tragant and Muñoz, 2000). The main evidence for this consideration came from the Self-determination theory by Deci and Ryan, which considered self-determination or autonomy as a prerequisite for behaviour to be intrinsically rewarding. That is, under certain conditions, external rewards can lead to intrinsic motivation (Dörnyei 1994).

Another important contribution to the area of motivation has been the Resultative Hypothesis by Hermann. This hypothesis stated that good results in the learning of a FL lead to a high index of motivation, so a high motivation would be the consequence of good results. Evidence of this theory would be found in Hermann’s study, considering two groups of German students of English, a first one of starters and a second one in 5th course. The latter showed more positive attitudes towards the goal community than the starters, which would be an effect of teaching, according to Hermann (as cited in Tragant and Muñoz 2000, p.85). More evidence for the Resultative Theory can be seen in Burstall (1975, as cited by Tragant and Muñoz 2000, p.85) that followed a group of learners of French as a FL, and found that the ones that got better marks in the first stages of learning showed more positive attitudes later on. Tragant and Muñoz (2000) also found evidence of this effect considering longitudinally two groups of primary students of EFL. Group A started learning English at 8 and group B at 11, and data was collected during three points in time. Results showed that starting at 8 or 11 did not affect the attitudes of the learners in a significant way and that there was a significant relationship between results in time 1 and positive attitudes in time 2. However, there has also been evidence that weakens this Resultative theory, considering that motivation is not the consequence of good results but the cause. Skehan (1989, as cited in Tragant 2006, p. 243) arrived at this conclusion after having criticised the methodological approaches of the studies of Burstall and Hermann. Gardner et al. (1997) also found evidence for this causal relationship after examining several variables, including aptitude, language learning strategies or anxiety.

Considering motivation in young learners, Mihaljević (2009) states that
attitudes and motivation are usually considered together as a variable and proposes two approaches to attitudes for YLs. A more traditional approach would consist of stable constructs and would consider that attitudes contribute to motivation and achievement. A more recent approach, though, would consider that attitudes change over time and that by looking into their development we can understand how the early FL learning process works.

Taking into account the relationship between motivation and achievement, many studies (Harris and Conway 2002, Bernaus et al. 1994 or Dörnyei et al. 2006, as cited in Mihaljević 2009) establish a significant relationship between the two variables, also in young learners. This relationship is considered to be strong but also complex. As Mihaljević (2009) argues, there is variation in the correlations depending on the measures used to measure achievement. Motivation seems to correlate more strongly with learner self-assessment and course grades than with objective measures of achievement. Tragant and Muñoz (2000) also found this nature of the test effect, as they found significant correlations in integrative tests but not in discrete-point tests.

In respect with age, Tragant (2006) proved that age of onset did not alter significantly the level of motivation. In their study she compared a group of students that started learning EFL at 8 and a group that started at 11 in Catalonia, and found no significant differences in motivation after 200 and 416 hours of instruction. However, significant differences were found after 726 hours of instruction, as the group that started later showed higher levels of motivation than the early starters (hours of instructions kept constant). This led her to conclude that hours of instruction and biological age were more important factors than age of onset.

The FLAGS questionnaire, developed by Tragant et al. (2009) has been used and validated in the context of Catalan schools with EFL programmes. The questionnaire was built from real answers of students of EFL in Catalonia, who were asked if they liked learning English and why. It comprises two sections: attitudes and goal orientations. The final version of the attitudinal part of the questionnaire consists of
three constructs: motivation to learn English (determination to learn English and liking it), linguistic self-efficacy (self-perceptions about learning the FL) and attitudes towards instruction (opinion about the way English is taught and their behaviour). The goal orientations part covers three constructs: interpersonal communication (use of English to communicate with people), popular culture (interest in pop culture products such as films or books) and professional/academic (acknowledgement of the importance of English for job or study purposes).

The questionnaire was chosen to measure motivation in this study for its validity and appropriateness to the context. However, only the attitudinal section of the questionnaire was used, since, from a quantitative perspective, we were interested in quantifying the level of motivation, not in considering the nature of it. That is why the goals orientations section was omitted. As Gardner (2001, p. 16) states: there is little evidence to suggest that orientations are directly associated with success [...] Orientations are simply classifications of reasons [...].

Aptitude and Motivation

According to Tragant et al. (2009, p.497), one of the major contributions in the field has been the work on the relationship between Gardner’s concept of “integrative motivation” and achievement. She also defines “orientation” as the reasons for studying a second language. Following Gardner’s view of Integrative Motivation, in his socio-educational model (Fig 2) that comprises Attitudes, Motivation and Achievement, attitudes influence motivation and aptitude, which in turn have an influence on achievement. Gardner claims that this relationship could also be reversed, considering that achievement has an effect on motivation and attitudes. Aptitude would be the more stable factor in the model. According to Gardner (2001) Integrative Motivation would be composed of Integrativeness (interest in learning the L2 to come closer to the L2 community, from openness to complete identification), Attitudes towards the learning situation and Motivation itself. The first two elements would be a support, but the major determinant would be Motivation, consisting of effort, desire to achieve the
goal and positive affect. Gardner acknowledges that this model is focusing only on the role of Integrative Motivation, and is not showing all the possible links among all the possible variables. It should also be stated that the model does not consider other factors that may influence achievement or may have indirect effects on aptitude and motivation, such as language learning strategies or anxiety.

As has been mentioned before, there are few pieces of research which deal with aptitude and motivation to explore its effects on achievement.

Gardner (1960) used the Spelling Clues, Words in Sentences and Paired Associates subtests from Carroll’s Psi-Lambda Foreign Language Aptitude Battery to measure aptitude. His purpose was to consider aptitude in relation to motivation and to determine what variables are related to a high level of motivation in second language acquisition. His participants were 83 grade ten students in six Montreal high schools from English-speaking homes. He found that language aptitude correlated

Figure 2: Basic model of the role of aptitude and motivation in second language learning, from Gardner (2001)
primarily with those French skills learned in school, while indices of social motivation correlated with all skills measured (p. 45).

In a later study, Gardner et al. (1997) considered several individual differences (language attitudes, motivation, anxiety, self-confidence, language aptitude, learning strategies, field independence, and measures of achievement in the language) in 102 university students learning French. His aim was to create a causal model of SLA that could examine the relationships among the variables simultaneously. After administering a battery of tests (among which was included the short version of the MLAT, consisting of Spelling Clues, Words in Sentences and Paired Associates) he grouped all the measures in relation to L2 achievement into eight factors, accounting for 64% of the variance. He found significant correlations among all the variables and objective measures of French, except for the Language Strategies and Field Independence measures. These same measures (and language attitude) did not correlate significantly with French grades, while the rest of the measures did. In this study, the aptitude measures obtained stronger correlations than the motivation and attitudes measures, but were the self-confidence and the anxiety measures the ones that obtained the highest correlations.

Ehrman and Oxford (1995) dealt with several variables in order to identify individual difference factors related to language learning. They studied a huge adult sample (855) and carried aptitude tests (MLAT) together with questionnaires and other tests to elicit motivation, anxiety, language learning strategies, learning styles, self-esteem and personality traits. They found that aptitude measures were the individual difference variables that were most strongly correlated with proficiency (p. 76), followed by affective and motivational factors that showed the next highest level of correlation with proficiency. The correlations for the personality variables were generally low.

More recently, Kiss and Nikolov (2005) developed a Hungarian version of the MLAT and piloted it to measure young learners’ aptitude. They also administered a motivation questionnaire (20 items with a Likert scale) and some English proficiency tests (listening, reading and writing). They found in their 6th grade participants that there was a strong correlation between aptitude and English proficiency (r=.634) and
that the relation among aptitude, proficiency and motivation was significant, but stronger for proficiency than for motivation. They concluded that aptitude explained over 20% of the variation in English performance and motivation almost 8%. Kiss and Nikolov also found significant similarities between Gardner’s socioeducational model and their model.

Sparks et al. (2009) followed their participants from grade 1 to grade 10, but administered the MLAT and the motivation survey in grade 9. They added L2 decoding and spelling tests to the MLAT, and found that they increased the correlation. Aptitude as measured by the MLAT alone was found to be a strong predictor of overall proficiency (44% of the variance), but it was even stronger when adding the decoding and spelling tests (56%). What is more relevant, Sparks et al. concluded that cognitive (L1 skills, L1 academic aptitude, L2 aptitude with decoding and spelling tests) and non-cognitive factors (motivation and anxiety) explained a substantial proportion of variance (66%).

To conclude, it could be stated that aptitude and motivation have been found to be two strong predictors of proficiency in the FL, but have been rarely considered together to explain variance in FL achievement, especially in young learners. The literature is consistent in finding aptitude a much more significant factor than motivation, although, as Gardner’s socioeducational model suggests, both variables could be in interaction with each other and with FL achievement.
3. METHOD

3.1. Participants

The participants were students in 5th grade at the same primary school (10-11 years old), who have been learning EFL since grade 1. The sample consisted of students in two groups, a total of 48 participants. Both groups have had the same hours of instruction, the same English teachers and have received the same treatment (teaching methods and materials). The school is a government funded but privately managed school located in a middle class neighbourhood in the area of Barcelona and follows an ordinary EFL program.

3.2. Instruments

Different instruments were used to measure the different variables.

3.2.1 Aptitude

To measure aptitude the MLAT-ES was used. The MLAT-ES is the Spanish adaptation of the MLAT-E developed by Stansfield and Reed (2003) tested in Spain, Costa Rica, Colombia and Mexico. As the MLAT-E, the MLAT-ES consists of four parts, three of which correspond to the ones in the MLAT:

- Part 1: Palabras ocultas (Hidden words).
- Part 2: Palabras que se corresponden (Matching words).
- Part 3: Palabras que riman (Finding rhymes).
- Part 4: Números en otro idioma (Number learning).

The participants took the Spanish version of the MLAT because all of them are bilingual Spanish-Catalan but Spanish dominant, and the test needs to be administered in the L1 of the participants.

3.2.2 Motivation

To measure motivation the attitudinal section of the FLAGS questionnaire was administered (it can be found in Appendix B). The
questionnaire was built from real answers from primary and secondary students, and covers different constructs such as *Motivation to learn English, Linguistic self-efficacy* and *Attitudes towards FL instruction*. The construct *Motivation to learn English* is compressed by different components based on Gardner’s socio-educational model but all items come from original answers from students in Catalonia. The questionnaire has undergone different revisions and simplifications since its creation, and the last version (not yet published) was used. The attitudes section consists of 21 items that must be answered using a 6-option Likert scale. Some of the items were simplified (especially changing the negative wording) so they were clearer for young students (the questionnaire had been used only with secondary students before). A longer version of this section of the questionnaire (30 items) was also piloted with a grade 6 group (25 students) of the same school before the simplifications were made. In this piloting, the questionnaire proved to be reliable enough (Cronbach’s Alpha= .878).

3.2.3 FL proficiency

To consider FL proficiency, *listening, reading* and *writing* tests were administered. The listening test consisted of 20 items that the students had to answer after having listened to two oral texts recorded in a CD. They listened to the recordings twice. The reading test consisted of 20 items where the students had to answer some questions or circle the correct option about two written texts. Both tests can be found in Appendix C. To measure their writing skills the participants were asked to write a timed composition about themselves, without the help of the teacher, their notes or any dictionary or book. They had twenty minutes to finish the task.

3.2.4 Analysis of instruments

Both the reading and listening tests had a maximum score of 20. Writing was operationalised as the result of different measures of *Complexity, Accuracy and Fluency*. For *Complexity*, lexical and structural complexity was considered.
The measure for Lexical Complexity was Guiraud’s index \( \text{index} = \frac{\text{types}}{\sqrt{\text{tokens}}} \) and for Structural Complexity number of words per clause. For Accuracy, number of errors per 30 words was calculated (30 words was the limit established so all writings could fit in). For Fluency, number of words was considered (discounting words in Spanish or Catalan and proper names).

The MLAT-ES was corrected and scored using the manual (Stansford and Reed, 2003).

The attitudes section of the FLAGS questionnaire was analysed following a quantitative approach. The section consisted of 21 items, so a mark from 1 to 6 was assigned to every item (according to the level of agreement to a positive statement or rejection of a negative one) and a total score was calculated. The minimum score was 21 and the maximum 126. The questionnaire was checked for reliability, and the Cronbach Alpha value obtained was .896.

### 3.3. Research Questions

The proposed research questions for the study were two:

1. To what extent are aptitude and motivation good predictors of EFL success in performance in young learners?
2. What’s the relationship between motivation and aptitude in young learners? For instance, do students with a high degree of motivation also present a high degree of aptitude? Do students with a low degree of motivation also present a low degree of aptitude?

### 3.4. Procedure

The different EFL tests to measure achievement were administered during class time in the months of March and April 2011. As it has been
mentioned before, for the writing task the students could not ask questions or check any book or dictionary. They had to complete the task in 20 minutes. The MLAT-ES was administered in two different sessions. In session 1 the students completed parts 1, 2 and 3 (in the timing that the test requires) and in session 2 they performed part 4. The questionnaire (in Catalan, the language for schooling in Catalonia) was answered in another session in about 15 minutes, and participants were allowed to ask for clarifications.
4. RESULTS

4.1 Analysis

As it was explained in the previous chapter, both the reading and listening tests had a maximum score of 20. The writing tasks were analysed using measures of Complexity, Accuracy and Fluency. For Complexity, Lexical and Structural Complexity was considered. The measure for Lexical Complexity was Guiraud’s index and for Structural Complexity number of words per clause. For Accuracy, number of errors per 30 words was calculated. For Fluency, number of words was considered. The CAF measures were converted to z values so they could be compared and combined. Then, the mean total writing was calculated, taking into account all the measures. The same conversion was applied to the scores of reading, listening and total writing to get the score of proficiency.

The MLAT-ES was corrected and scored using the manual (Stansford and Reed, 2003). Parts 1 (palabras ocultas) and 2 (palabras que se corresponden) consisted of a maximum score of 30 each, part 3 (palabras que riman) of 38 and part 4 (aprendamos números) of 25. The total maximum score of the MLAT-ES was 123.

As it has been mentioned previously, the attitudes section of the FLAGS questionnaire was analysed quantitatively and the possible scores ranged from 21 to 126. The questionnaire can be found in Appendix B.

4.2 Correlations

Correlational analyses were computed using Pearson product-moment correlation coefficient. As we can see in Table 1, the relationship between proficiency and aptitude was high (r=.771), and the relationship between
**proficiency** and **motivation** was significant but not so strong \((r=.358)\). Between **motivation** and **aptitude** the relation was not significant \((r=.214)\).

<table>
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<th></th>
<th>proficiency</th>
<th>motivation</th>
<th>aptitude</th>
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<td>.771**</td>
</tr>
<tr>
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<td></td>
<td>.012</td>
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</tr>
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<tr>
<td><strong>motivation</strong></td>
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<td>1</td>
<td>.214</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.012</td>
<td></td>
<td>.145</td>
</tr>
<tr>
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<tr>
<td><strong>aptitude</strong></td>
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<td>.214</td>
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<tr>
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<td><strong>N</strong></td>
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</table>

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

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

If we consider the subcomponents of **proficiency** (*reading, listening and total writing*) separately (Table 2) we can observe similar patterns.

**Reading** correlated significantly with **aptitude** \((r=.551)\), not so much with **motivation** \((r=.289)\). The same is true for **listening**, where the correlation with **aptitude** was even stronger \((r=.666)\). For **writing**, the correlations were stronger with **aptitude** \((r=.748)\), but not significant between **writing** and **motivation** \((r=.242)\). All the assumptions were tested when analysing the data and an outlier was found for the reading scores. However, these same participant scores were valid for the other tests. For this reason, the sample of the variable **reading** was \(n=47\) and not \(n=48\) like in the rest of the variables.
In order to explore more detailed associations in the data, the subcomponents of proficiency were related to the subtests of the MLAT (Table 3). Reading correlated significantly with three of the subtests of the MLAT: *palabras que se corresponden* (measuring sensitivity to grammar, $r=.525$, $p<.01$), *palabras que riman* (measuring the ability to hear speech sounds, $r=.507$, $p<.01$) and *aprendamos números* (measuring rote memory, $r=.531$, $p<.01$). Reading did not correlate with the *palabras ocultas* subtest, which measures sound symbol association and vocabulary in the L1 ($r=.176$). Stronger correlations were found between listening and almost all the subtests of the MLAT, especially with *palabras que riman* ($r=.609$, $p<.01$), as it measures the ability to hear speech sounds. The correlations among the other subtests and listening were also significant: *palabras ocultas* $r=512$ $p<.01$, *palabras que se corresponden* $r=483$ $p<.01$, and *aprendamos números* $r=507$ $p<.01$. If we consider the different measures of writing separately, we can see that the

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<thead>
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<thead>
<tr>
<th>writing</th>
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<td>,477**</td>
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<tr>
<td></td>
<td>,606**</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
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<td>47</td>
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</tbody>
</table>

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

*. Correlation is significant at the 0.05 level (2-tailed).
Fluency measure (number of words) correlated significantly with all the subtests of the MLAT, and that similar patterns were found with the measures of Lexical and Structural Complexity (Guiraud's index and number of words per clause, respectively). In the case of Accuracy (number of errors per 30 words), the correlations were obviously negative and more significant with all the subtests except palabras ocultas ($r=.327 \ p<.05$). From all the CAF measures, number of errors per 30 words was the one that resulted in stronger correlations. When merging all the measures into the variable total writing, the subtest palabras que se corresponden correlated strongly ($r=.706 \ p<.01$). The correlations between this variable and the subtest measuring rote memory (aprendamos números) were also quite significant ($r=.610 \ p<.01$). The correlations with the other two subtests (palabras ocultas and palabras que riman) were significant but not so strong ($r=.460$ and $r=.573 \ p<.01$, respectively).

4.3 Multiple regression analysis

Standard multiple regression analyses were carried out to investigate the predictive power of the variables motivation and aptitude on each one of the subtests of proficiency: listening, reading, and writing, and on the combined scores of proficiency (table 4). The two variables explained 45% of the variance of the listening scores and 54% of the writing scores. However, they only accounted for the 27% of the variance in the reading subtest. As it can be observed from these values, aptitude and motivation had a stronger predictive power on listening and writing than on reading. The two independent variables together (aptitude and motivation) accounted for the 61% of the variance of proficiency.
Table 3: Subtests of the MLAT correlations

<table>
<thead>
<tr>
<th></th>
<th>palabras ocultas</th>
<th>palabras que se corresponden</th>
<th>palabras que riman</th>
<th>aprendamos números</th>
<th>Total aptitude</th>
<th>motivation</th>
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<td>.000</td>
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<td><strong>Listening</strong></td>
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<td>.507</td>
<td>.666</td>
<td>.320</td>
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<tr>
<td><strong>number of words (F)</strong></td>
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<tr>
<td><strong>n of errors per 30 words (A)</strong></td>
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<td>-.635</td>
<td>-.624</td>
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<tr>
<td><strong>Guiraud’s index (LC)</strong></td>
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<tr>
<td><strong>n of words per clause (SC)</strong></td>
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</tr>
<tr>
<td>Pearson corr.</td>
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<td>.554</td>
<td>.356</td>
<td>.483</td>
<td>.556</td>
<td>-.086</td>
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<tr>
<td>Sig (2 tailed)</td>
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<td>.000</td>
<td>.013</td>
<td>.001</td>
<td>.000</td>
<td>.563</td>
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<td>48</td>
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<td>48</td>
</tr>
<tr>
<td><strong>Total writing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pearson corr.</td>
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<td>.610</td>
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<td>.242</td>
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<td>.000</td>
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<td>.000</td>
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</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).
In all cases the beta value of the standardized coefficient was larger for aptitude than for motivation, so the contribution of aptitude was always more significant. In the case of proficiency, the unique contribution of aptitude \((sr^2)\) was .50 whereas the unique contribution of motivation was .03. If the different subtests are considered, the unique contribution of aptitude for listening is .37, for reading .25 and for writing .50. So aptitude contributed to explain a larger proportion of the variance of writing than of the other subtests. Contrary to this, motivation made a unique contribution of .03 in listening and reading, but its contribution to writing was much less substantial (.007).

Table 4: Standard multiple regression analysis (Independent variables: aptitude and motivation)

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<th>Dependent variable</th>
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<th>Part (R)</th>
<th>(sr^2)</th>
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<td></td>
<td></td>
<td>Apt:.728</td>
<td>Apt:.711</td>
<td>Apt:.50</td>
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5. DISCUSSION AND CONCLUSIONS

After having presented the results, the research questions proposed in the design of this study can be answered. First, we enquired to what extent Aptitude and Motivation were good predictors of EFL success in performance in young learners. Taking into account the correlations generated, it could be argued that in this group of learners, both factors were strong predictors of EFL achievement, although Aptitude was a much stronger predictor than Motivation. When the different dimensions of proficiency were considered, this difference in the strength of the predictive power of Aptitude and Motivation was found in approximately the same terms in Reading and Listening. However, in the case of Writing, the differences were more extreme, being Aptitude a very significant factor and Motivation a much less significant factor. Together, Aptitude and Motivation explained 61.8% of the variance in performance, which constitutes an important amount. But it should be emphasized that, from this 61.8%, Aptitude had 50% of unique contribution and Motivation had a unique contribution of only 3%.

This finding is consistent with the literature, which has found Aptitude (as measured by the MLAT) and Motivation strong predictors of EFL performance (Kiss and Nikolov, 2005; Sparks et al, 2009). Kiss and Nikolov (2005) obtained a similar percentage (56.9%) of variance in overall proficiency in their grade 6 participants. They considered the same dimensions of proficiency: listening, reading and writing but they added more variables to their model (English grade, Hours of English, Gender and Preference for English). Sparks and his associates (2009) also obtained a similar percentage of variance in EFL performance (66%) in their grade 9 participants (they were followed longitudinally from grade 1 to grade 9, but both the MLAT and the Motivation Survey were administered in grade 9), but again they had more variables to explain this great percentage (L1 skills, including L1 decoding, spelling and reading, L1 phonological awareness, vocabulary, listening comprehension, and anxiety). Suárez (2010), in a study with young learners in Catalonia, also found significant correlations between the MLAT and different proficiency tests (a cloze, a listening test and in some groups a dictation).
With regard to the relationship between Aptitude (as measured by the MLAT) and proficiency, this study partially confirmed that the correlations are stronger when considering proficiency as a whole than when considering the different dimensions of proficiency separately. This is in consonance with what Sparks and his associates found in their study, which led them to conclude that the MLAT predicted total proficiency better than a specific language skill (Sparks et al, 2009). However, it should be stated that in the case of our study the correlations between Writing and Aptitude are quite high ($r=.748$), slightly lower than the ones between Proficiency and Aptitude ($r=.771$). This may due to the operationalization of Writing based on different CAF measures, which may have resulted in a more exhaustive definition of the variable.

The second research question was whether there was a relationship between these two explanatory factors: Aptitude and Motivation. In our study the relationship between Aptitude and Motivation was not significant, which led us to conclude that a student with a high level of Aptitude does not have to present a high level of Motivation, and the other way around. This is consistent with the results presented by Sparks and his associates (2009), who found weak correlations between Aptitude and Motivation ($r=.27$). Kiss and Nikolov (2005) found significant but not strong correlations ($r=.367$) between the two factors.

In conclusion, it could be stated that the findings presented in the study confirmed the importance of Aptitude to a high degree and Motivation to a smaller degree also in young learners following EFL programmes. These factors should not be ignored in the design of EFL programmes, as they explain a significant amount of the variance in the EFL performance and are crucial to understand how the language acquisition process works. Further research could shed some light on other factors that could explain other fractions of the process. The findings also allow us to point out that Aptitude and Motivation do not have to be related. This last idea is partly inconsistent with Gardner’s model, which establishes that attitudes have an effect on Aptitude. Our findings, together with those of Sparks and his associates, may contradict this effect, as no significant relations were found between Aptitude and Motivation. We should bear in mind that attitudes were included in the FLAGS questionnaire, used to measure the
motivation of our participants, under the construct attitudes towards instruction. This discrepancy with Gardner’s model may be due to the fact that the participants in this study were young. It may be the case that attitudes may influence Aptitude when students are older, more cognitively mature and have more experience learning EFL. It is also possible that some relation exists between Aptitude and Motivation and Speaking skills, as they have not been considered in the design of this study. Further research could also concentrate on these issues.

Limitations

One of the first and obvious limitations of the present study is the sample, which is concentrated on a specific school. This school could be representative of many schools in Catalonia, but in no case can it be representative of all. The amount of participants is also limited, and that does not allow us to make great generalizations of the results. Further studies in this direction would have to consider different schools in different socio-cultural contexts (but with similar EFL programmes) and bigger samples. It should also be mentioned that it was the English teacher who administered the motivation questionnaire to the participants, so it might be possible that this could have affected the motivation score somehow. However, several reasons allow us to consider the questionnaire results valid. Firstly, it obtained a high reliability (the Cronbach alpha value was .896). Secondly, it correlated significantly, so this means the results presented enough variation. Thirdly, even if some participants overrated their answers to some items, the purpose of the study was to compare motivation with other variables and not consider motivation per se, so the validity of the results would not be affected by this issue.

Another limitation lies in the operationalization of proficiency, which did not include speaking skills. Further research should include them so as to have a fuller picture of the participants’ proficiency and the influence of aptitude and motivation on it.
The Effects of Aptitude and Motivation on the Acquisition of EFL in Young Learners

REFERENCES


The Effects of Aptitude and Motivation on the Acquisition of EFL in Young Learners


APPENDICES

Appendix A. Consent letter (in Catalan)

Benvolguts pares i mares

Aquest curs els alumnes de 5è participaran en un estudi tutelat des de la Universitat de Barcelona sobre la motivació i la facilitat en l’aprenentatge de l’anglès. Per això, des de l’àrea d’anglès, se’ls passarà un qüestionari i uns petits tests per veure quina és la seva facilitat per aprendre lligües. Aquestes proves no suposaran cap perjudici pels alumnes, tot el contrari, ens ajudaran a entendre com funciona el seu procés d’aprenentatge i millorar així la docència. Els resultats seran analitzats pel professor d’anglès i les dades estaran protegides per l’anonimat en tot moment, referint-se als seus fills i filles amb un número.

Per poder dur a terme l’estudi us demanem la vostra autorització signant a la part inferior d’aquest full i retornant la butlleta a l’escola el més aviat possible.

Gràcies per la vostra col·laboració.

Atentament,

David Rosa

Professor d’ànglès

Jo, pare/mare/tutor de ......................... (nom de l’alumne) estic assabentat/da i dono permís perquè el meu fill/a participi a l’estudi sobre motivació i facilitat en l’aprenentatge de l’anglès.

Signatura
Appendix B. Attitudes section of the FLAGS questionnaire

ENQUESTA D’ACTITUDS SOBRE L’APRENENTATGE DE L’ANGLÈS

Aquest qüestionari consta de dos apartats amb una sèrie de preguntes que hauràs de respondre segons una escala del A (molt d’acord o molt important) al F (gens d’acord o gens important). Marca una opció per cada pregunta al full de respostes. Tingues en compte que les teves respostes es tractaran confidencialment i que el teu professor/a no les tindrà en compte. Abans de començar, fixa’t en els següents exemples de resposta d’una persona a qui agrada anar al cinema:

1. M’agrada anar al cinema.
   A molt d’acord B d’acord C una mica d’acord D poc d’acord E no d’acord F gens d’acord

2. No m’agrada anar al cinema.
   A molt d’acord B d’acord C una mica d’acord D poc d’acord E no d’acord F gens d’acord

Gràcies per la teva col·laboració.

APARTAT 1

Posa una creu per indicar quina és la teva opinió sincera sobre les afirmacions següents.

Contesta segons l’escala següent:
The Effects of Aptitude and Motivation on the Acquisition of EFL in Young Learners

<table>
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<tr>
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<th>A</th>
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1. M'agrada aprendre anglès.
2. En general, les classes d’anglès sempre se m’han fet llargues.
3. L’anglès és un idioma que m’atreu.
4. A la classe d’anglès estic menys atent que a la resta de classes.
5. De gran voldré saber anglès.
6. En general, tinc facilitat per aprendre idiomes.
8. M’agradaria arribar a parlar l’anglès igual que parlo el castellà i/o el català.
10. En general, l’anglès em va molt bé.
11. De vegades no entenc els deures d’anglès.
12. Quan marxi de l’escola voldria continuar estudiant anglès.
13. M’agrada la classe d’anglès perquè és més distreta que les altres.
14. Em costa entendre els vídeos o les gravacions que el/la professor/a ens posa a classe.
15. A la classe d’anglès poso molt d’interès en les activitats que ens fa fer el/la professor/a.
16. Quan veig alguna cosa en anglès m’hi fixo per veure si l’entenc.
17. Normalment el que fem a classe és avorrit.
18. Crec que quan sigui gran sabré prou anglès per entendre pel·lícules.
19. No em costa entendre el/la professor/a quan parla en anglès.
20. Trobo difícils la majoria de regles en anglès.
English translation of the items:

1. I like learning English.
2. In general, I've always found English lessons long.
3. I am attracted to the English language.
4. I am less attentive in the English class than in other classes.
5. When I grow up I would like to know English.
6. In general I feel I have a special gift for language learning.
7. I like the way English is taught at school.
8. I would like to be able to speak English as well as I speak Spanish/Catalan.
9. I am interested in learning English.
10. In general, I am very good at English.
11. Sometimes I do not understand English homework.
12. When I finish high school. I would not like to continue studying English.
13. I like the English class because it is more fun than other classes.
14. I find it difficult to understand the videos or the cassettes that the teacher brings to class.
15. In the English class I pay a lot of attention to the activities that the teacher asks us to do.
16. When I see something written in English. I try to see if I understand.
17. What we usually do in the English class is boring.
18. I think I will never know enough English to be able to understand movies.
19. I don't find it difficult to understand the teacher when s/he talks to us in English.
21. I really want to learn English.
Appendix C. Listening and reading tests.

Listening Test

1. Listen and circle A or B. 

2. Listen and number. 

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1  A  B  2  A  B  3  A  B  4  A  B  5  A  B
6  A  B  7  A  B  8  A  B  9  A  B  10  A  B
1. Read and answer.

There’s a robbery at the art gallery. At 9 o’clock, the security guards go home. There aren’t any security guards but there are three robbers. They take three paintings. In the morning the robbers phone the police.

In the art gallery there’s a map to help the police find the paintings. The police go past the cinema, turn right at the traffic lights, turn right at the stadium and right again into the park. They cross the park and go into the art gallery. The paintings are in the toilets.

1. What time do the security guards go home? __________________________
2. How many robbers are there? __________________________
3. Do the police go into the stadium? __________________________
4. Do they go into the art gallery? __________________________
5. Where are the paintings? __________________________

2. Read and answer.

Ferdinand has got blue eyes and brown hair. He washes his hair everyday. Today he’s wearing a black T-shirt, black jeans and trainers. He likes the girl at the hairdressers. He takes the wrong shampoo bottle and washes his hair.

The next morning he has got lots and lots of hair. He’s very rude. The hairdresser is polite and cuts off Ferdinand’s hair. Ferdinand is rude again. The girl doesn’t like him because he is rude.

1. What colour are Ferdinand’s eyes? __________________________
2. What is he wearing today? __________________________
3. Does Ferdinand like the girl at the hairdressers? __________________________
4. Is Ferdinand polite? __________________________
5. What does the hairdresser do? __________________________
3 Read and circle.

Dear Jo,
I’m having a great holiday with my mum, my dad and my brother Sam. We go to the beach a lot and go to the cafe for lunch. Mum likes chicken, so she has chicken and chips. Dad likes fish, so he has fish and chips. Sam doesn’t like fish or chicken. He has pizza with tomatoes, cheese and pineapple. I don’t like chicken or fish, and I hate pizza! But the sausages are nice. I love sausages! We all love ice cream, so we eat lots of ice cream. See you soon.

Love Pete

1 They are a) on holiday b) visiting friends c) at home.

2 They are at the a) mountains b) beach c) jungle.

3 Pete is with his a) family b) friends c) teacher.

4 They have lunch at a) home b) a cafe c) the cinema.

5 Mum likes a) sausages b) chicken c) meat.

6 Pete has a) sausages b) chicken c) pizza.

7 Pete loves a) fish b) pizza c) sausages.

8 Sam doesn’t like a) ice cream b) fish c) pizza.

9 Pete hates a) chicken b) pizza c) fish.

10 Pete, Sam, mum and dad love a) meat b) ice cream c) pizza.