

Students' Learning Style and Spelling Ability

A study on the relationship between learning style and spelling ability in
Swedish upper secondary school

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Abstract

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Title:	Students' learning style and spelling ability: A study on the relationship between students learning style and their spelling ability in Swedish upper secondary school
Writer:	Kajsa Olsson
Purpose:	To examine if there is a connection between learning style and spelling ability and if so, which styles seem preferable.
Method:	A quantitative study of pupils' learning style and spelling ability in a questionnaire.
Material:	40 pupils' answers to a questionnaire.
Main results:	There is a connection between students' learning style and their spelling ability. Good spellers are more likely to be visual, random, deductive and abstract. Furthermore, it is showed that poor spellers are kinesthetic to a higher degree; however it has proved more difficult to define their cognitive learning style as they are likely to be both random and sequential, deductive and inductive.

Table of contents

1. Introduction	1
1.1 Aim	1
2. Background	2
2.1 History on learning styles	2
2.2 Resent investigations	3
2.3 The English spelling system	6
2.4 History of spelling	6
2.5 Previous studies	8
3. Method and Material	9
3.1 Chosen learning style dimensions	9
3.2 Subjects	10
3.3 Questionnaire	10
4. Results and Discussion	11
4.1 Overview of good and poor spellers	11
4.2 Sensory channels	12
4.3 Cognitive styles	13
4.4 Summary of the results	16
4.5 Types of spelling errors	16
4.6 Students' motivation	18
4.7 Pedagogical implications of the study	19
5. Conclusion	20
References	
Appendix	

1. Introduction

In the curriculum for the non-compulsory school system (Lpf 94), under the headline “Goals and guidelines”, one can find that “the school shall strive to ensure that all pupils [...] develop an insight into their own way of learning and an ability to evaluate their own learning” (1994). Similar statements can also be found in the syllabus of the different school subjects. This highlights the importance of “metacognition”, which, according to Olga Dysthe, professor in the Program of Research and Pedagogy in the University of Bergen, is “the ability to reflect about one’s own thinking, understanding and learning and become aware of the way in which one learns best” (Dysthe 2003:37 my translation). In order to do this, one has to be familiar with the notion of “learning style” which Madeline Ehrman defines, in her book *Understanding second language learning difficulties* as “preferences for going about the business of learning” (Ehrman, 1996:49). Furthermore, Ehrman stresses the importance of this notion, as a mismatch between learning style and teaching methodology can lead to learning difficulties on behalf of the student (Ehrman 1996:50).

A great number of investigations have been carried out in order to determine and define different learning styles and as a consequence there are numerous dimensions of this concept. Researchers have also tried to determine which styles are the most successful ones when learning. However, there is no conclusive answer to this as there are many factors that come into play. For instance, the auditory style should be the most advantageous when practicing listening comprehension, while it is less appropriate when reading. Furthermore, it is important to keep in mind that no one only uses one style when learning, the dominant one is always complemented by the nondominant ones (Ehrman 1996:51) and learning styles may differ from situation to situation (1996:53).

1.1 Aim

The aim of this essay is to examine if there is a connection between learning style and spelling ability. In order to accomplish this study, a questionnaire was made in which the student’s learning style was determined. Secondly, I examine if there are any differences in spelling ability depending on the student’s learning style and if so, which style seems to be preferable.

2. Background

2.1 History on learning styles

The first studies on the psychology of learning were made by William James and date back to the late nineteenth century. His main concerns were the study of the mind, human behaviour and learning. From these ideas a new branch of learning psychology was born, namely “behaviourism” (Pritchard 2005:4). Pritchard defines behaviourism as “a theory of learning focusing on observable behaviours and discounting any mental activity. Learning is defined simply as the acquisition of new behaviour” (Pritchard 2005:7). However, another and quite different direction developed alongside this new area of study, which was referred to as “constructivism” (Pritchard 2005:4). According to Pritchard, “constructivists view learning as the result of mental construction. That is, learning takes place when new information is built into and added onto an individual’s current structure of knowledge, understanding and skills. We learn best when we actively construct our own understanding” (Pritchard 2005:22).

According to Pritchard, the earliest proponent of behaviourism is John B. Watson. His new idea on how to make psychology become a true science was to create a process of detailed objective observations and scientific measurements. That way, only things that could be seen happening (behaviour) were of interest (Pritchard 2005:6). An important concept that was developed by behaviourists is “stimulus-response”. This refers to the expected reaction of an animal or person on a specific stimulus, for instance, dogs responding to the stimulus “sit” by sitting or children responding to the teacher’s question by answering.

A general criticism to behaviourism is that it does not take into account important factors that are involved in a person’s learning process, such as the unseen mental process and environmental factors apart from the reward/punishment (Pritchard 2005:4). Critics of the application of the behaviourist approach in school claim that children who are given rewards for learning are likely to lose interest in learning for its own sake. It is also likely that it provokes competition among the students and feelings of injustice (Pritchard 2005:13).

In the other branch of learning psychology, the constructivist Jean Piaget is considered to be one of the most influential proponents. Piaget developed a theory concerning the child’s learning process, which he called the “developmental stage theory”. This age-related stage can still be useful today even though modern investigations have gone further (Pritchard 2005:22). Two important notions in Piaget’s learning process are *assimilation* and

accommodation. The first is “the process whereby new knowledge is incorporated into existing mental structures. The knowledge bank is increased to include new information”, whereas the second notion is defined as “the process whereby mental structures have to be altered in order to cope with new experiences which have contradicted the existing model” (Pritchard 2005:25). The most essential idea in constructivism is that individuals actively construct their own knowledge and understanding. There are different interpretations on how this is done, where the most important ones are the “schema theory”, which are mental models described and examined by different psychologists, for instance Piaget, and “social constructivism” developed by Vygotsky in the early twentieth century. Råger Säljö, professor in pedagogical psychology in the University of Gothenburg (2000:18) explains that social constructivism bases its study in the interplay between collective and individual. That way, the cognitive development is not only a result of the learner’s own activities, observations and understandings of the surroundings. The fundamental idea in social constructivism is that the surroundings are interpreted and mediated to the learner so that he or she only learns what is within the frame of thought patterns that is provided (Säljö 2000:66).

2.2 Recent investigations

A vast number of sub-branches to behaviourism and constructivism have been developed during the twentieth century, but due to the limited scope of this essay I cannot name them all. Nevertheless, in the remainder of this section I mention some of the most common theories and give an overview of some general characteristics about learning styles.

Learning style dimensions can either be oriented towards cognitive processing, or be related to personality. However, Ehrman (1996:57) stresses that most models overlap. Cognitive styles are considered apart from feelings and relationships, whereas personality styles reflect on feelings and interpersonal relationships. With the personality related models, one could mention the Myers and Myers theory, which has been one of the most applied theories of style. It works with four dimensions; *extraversion-introversion*, *sensing-intuition*, *thinking-feeling* and *judging-perceiving* (Ehrman 1996:93). Sternberg and Zhang (2001:14) describe the four dimensions as follows; the first couple (extraversion-introversion) deals with attitudes towards people, where “*extraversion* characterizes people who are outgoing [...] and *introversion* describes people who are more inwardly focused”. The second couple (sensing-intuition) treats perceptual functions, in which an *intuitive* person is described as someone that

“perceives stimuli holistically and concentrates on meaning rather than details” and a *sensing* person “perceives information realistically and precisely”. The third couple (thinking-feeling) concerns judgement, where “*thinking* people are logical, analytical and impersonal in their judgements, whereas *feeling* people are more oriented toward value and emotions in their judgements”. Finally, the fourth couple (judging-perceiving) treats the interpretation of information. “*Perceptive* people are more dependant on information in the environment, whereas *judging* people are more willing to go beyond the information in the environment to make interpretations”.

To measure styles in this theory, the Myers-Briggs Type Indicator (MBTI) is used, which is a questionnaire where people respond to statements about themselves and are ultimately classified in different categories. In the MBTI, some cognitive learning styles are included. In that way, one can find that a person who prefers sensing and judging tends to prefer to learn sequentially, while as an intuitive and perceiving type tends to prefer the random learning style (Ehrman 1996:101).

With the cognitive style, Ehrman (1996) mentions the following; *Sequential-random, deductive-inductive and concrete-abstract*. The *sequential* learner “wants to learn step by step, following a logical order, [...] they are often systematic and [...] good planners” (1996:64). The *random* learners also tend to refer to themselves as *sequential* learners and are often systematic as well. However, Ehrman (1996:64) claims that their systems often are idiosyncratic and therefore seem random to the outsider. A *random* learner stores data in various places and can find them quickly, he or she has no problem with ambiguity and “embraces surprises that might disrupt the learning of others” (1996:64). The difference between a *deductive* and an *inductive* learner has to do with the direction of study. A *deductive* learner begins with the rules and applies it to the data whereas the *inductive* learner begins with the data and seeks to find a theory or a rule (1996:72). Finally, the distinction between a *concrete* learner and an *abstract* learner is that the *concrete* learner needs to “relate what is learned to direct experience.” (1996:68). He or she prefers using the language rather than talking about it, while the *abstract* learner prefers to study grammatical rules and systems. The *abstract* learner also finds it difficult to use the language as he or she becomes excessively concerned with accuracy.

Another widespread theory deals with independence and sensitivity, developed by Witkin in 1973. This dimension is considered a mixture between cognitive- and personality related models and “addresses the degree to which an individual focuses on some aspect of experience and separates it from its background” (Ehrman, 1996:78). A *field independent*

learner is skilful at dealing with language which is out of context but less adept at coping with global processing where several things are going on at the same time. The opposite of field independence is *field sensitivity* and is defined as the “presence of responsiveness at some level to the surrounding background” (Ehrman 1996:78). As one can see, this model is closely related to some of the cognitive styles, mentioned earlier. The field independent student can also be defined as an abstract learner, while the field sensitive student to some degree can be interpreted as a concrete learner.

Sternberg and Zhang (2001:8) also point out the Conceptual Style Test as a way of defining learning style. This is a cognitive model where one is either *analytic-descriptive*, *themat-relational* or *inferential-categorical*, depending on how he groups things together. An example of this could be to decide which two things best go together between the following three animals: whale, shark and tiger. The first type would choose the whale and the shark, as they look alike. The second would also choose the whale and the shark as both of them swim, whereas the third type would say that the tiger and the whale fit best as they are mammals.

Another angle on learning styles is through the sensory channels. There are three dimensions: visual, auditory and kinesthetic. A *visually* orientated student learns through the eye. He or she will probably need to write things down in order to remember them and feels more comfortable reading instructions than hearing them. In contrast, an *auditory* learner will prefer to hear instructions in order to understand and is likely to read texts out loud. The *kinesthetic* learner needs to move around a lot and finds it difficult sitting still. As this does not fit with the school environment, kinesthetic learners are taught to suppress this need and be ashamed of pursuing this way of learning (Ehrman 1996:60).

It is important to stress that a learning style is supposed to be looked upon as a preference and not as a rigid behaviour. Few people operate only in one style all the time and therefore learning style designation is not supposed to put people into boxes.

Closely related to learning styles is the concept of *learning strategy*, which Tricia Hedge, a Senior Lecturer in the School of Education at Nottingham University, defines as “techniques used by learners to deal with input, assimilate new language, store, retrieve, and practise using it” (Hedge 2001:19). Several investigations have been carried out in order to determine what strategies the good learner uses. This has turned out problematic as mere observations of learners yield insufficient information and the second method, which bases its study on learners’ introspective accounts of their learning, only investigate conscious strategies (Hedge 2001:79). Nevertheless, there is one study that made an important contribution to the field of learning strategies, namely O’Malley and Chamot (1990). What

they did was to divide a class of language learners into three groups. The first group did not get any strategy training, while as the second and the third group got different kinds of strategy trainings. The result showed that the two groups who got strategy training improved their speaking skills (Hedge 2001:80). This indicates that it is the awareness of the learning process that helps the student improve his or her language knowledge.

2.3 The English spelling system

English spelling causes a great deal of trouble among learners (and some natives) and it is therefore often suggested that the language has irregular spelling system. Meanwhile, there are others that claim that there is a highly predictable spelling system in the English language. David Crystal (2003:271) disentangles this ambiguity by explaining that the proportion of irregularity depends on whether proper names, rare foreign loan words and lengthy technical terms are included or not. He also clarifies that English spelling appears to be more irregular than it really is because many of the most frequently used words are among the approximate 500 words whose spelling is completely irregular.

Besides, it is essential to problematize the notion of regularity. According to Crystal “Regularity implies the existence of a rule which can generate large numbers of words correctly” (2003:272). That way, a rule that works for 500 words is considered to be plainly regular, while as one that simply applies for ten words is doubtfully a rule at all. Based on this concept of regularity, 80 per cent of everyday English words are spelled according to regular patterns. Finally, Crystal (2003:272) reaches the conclusion that one should not exaggerate the size of the problem, nor minimize it either, as a great deal of confusion is caused by the irregular spelling.

2.4 History of spelling

There are a number of different reasons as to why English spelling is problematic. To start with one has to take into account that the current spelling system “is a result of a process of development that has been going on for over 1000 years” (Crystal 2003:274). Crystal further mentions six linguistic and social events that have contributed to the result of the present spelling system.

Firstly, he claims that the problem started with the introduction of the Roman 23-letter alphabet for the 35 phonemes of Old English (Crystal 2003:274). Today the 26 letters have to handle over 40 phonemes, which makes English a non-phonetic language, that is, it does not fulfil the criterion of one letter-one phoneme (Crystal 2003:272).

Secondly, Crystal (2003:30) highlights the effects that the Norman Conquest in 1066 had on the English language. The invaders firstly introduced their language to the church as they appointed French-speaking abbots and bishops. Secondly, French-speaking barons were appointed and French merchants took advantage of the commercial opportunities. That way, French flourished among the new hierarchy and nobles. Two centuries later, conflicts emerged between the two countries and led to the Hundred Years War, which resulted in the diminished status of French (Crystal 2003:31). There are several linguistic consequences of the Norman Conquest; firstly, new words were introduced. The majority of the loans belonged to fields of administration, trade, medicine, art and fashion, others were abstract terms which were constructed with French affixes, such like *con-*, *trans-*, *pre-*, *-ance*, and *-tion*. Examples of words from Old English that were substituted are *leod*, which gave place to *people*, *wilting* to *beautiful* and *stow* to *place*. Some of the new words did not replace the already existing words but co-existed and developed slightly different meanings or connotations. Examples of this are *doom* (OE), and *judgement* (F), *heartly* (OE) and *cordial* (F) and *house* (OE) and *mansion* (F) (Crystal 2003:46). Secondly, Norman scribes started to write the English they heard according to French spelling conventions. As a result, a number of Old English forms were replaced by French forms; *h* by *gh* in words like *might* and *enough*, *u* by *ou* in *house*, *c* by *ch* in *church*, etc. (Crystal 2003:41).

Another social event that affected English spelling was the introduction of printing. At first, it caused confusion as many printers came from the Continent and brought their own spelling norms. In addition, words were often shortened or lengthened in order to achieve line justification. The most common variation was in the final *e*. However, the printing also gradually contributed to the stabilization of the spelling system (Crystal 2003:274). William Caxton set up the first printer in England in the late 15th century which gave people a greater access to books. This also led to a growing interest of the language itself and eventually the first grammar books started to appear (Crystal 2003:56).

In the 15th century, a major change in the pronunciation took place, which is referred to as the Great Vowel Shift. Crystal explains that “the change affected the seven long vowels in the language [...] each vowel changed its sound quality, but the distinction between one vowel and the next was maintained” (2003:55). The Middle English long vowels were raised

and those that were already raised were diphthongized. This event was a long process and several vowels took over 200 years to work their way to their present sound. The Great Vowel Shift is responsible for the complexity of the present-day spelling system because it occurred at the same time as spelling became more stable by the introduction of printing, as mentioned earlier. For instance, the word *name* is spelled with an *a* because it was pronounced with a /a:/ when the spelling convention was established and the sound change that later occurred was ignored by the printers (Crystal 2003:275).

Furthermore, in the 16th century, a spelling reform occurred, where scholars tried to indicate the origin of a word through its spelling. That way a *b* was added to the word *debt* to make clear that it came from the Latin word *debitrum*. Likewise, a *b* was inserted to *doubt* and a *g* to *reign*, to demonstrate its origins *dubitare* and *regno*. Other attempts to reorganize the spelling were to extend some spelling forms to apply for similar words, for example, the *gh* from *night* and *light* was extended to words like *delight* and *tight*. This resulted in an increased number of irregular forms (Crystal 2003:274).

Finally, a new wave of loanwords arrived in English from different languages such as French, Spanish, Portuguese, Italian, Latin and Greek, in the late 16th and early 17th century and brought with them a number of alien spellings. Some of those words are *bizarre*, *brusque*, *caustic* and *cocoa*. However, Crystal claims that “while these periods [the Norman Conquest and the late 16th- early 17th century] represent the peaks of borrowing activity in the history of English, there was no reduction in the underlying trend during later centuries” (2003:126). English is, according to him, one of the most prolific borrowers in the world.

2.5 Previous studies

Doval-Suárez (2004:58) mentions Charles Read as an important name on cognitive studies of spelling. He developed a new view of spelling as a linguistic process, in contrast to the traditional view of spelling as a mere visual process. With this as a starting-point, Frith (1980) developed the *dual route model of spelling*, which is based on the idea of two separate and independent processes or routes, one visual and one phonological. The visual process functions as a mental lexicon which is built up after a certain degree of exposure to a word, whereas the phonological process “produces spelling by breaking up a word into its component phonemes and then uses the knowledge of phoneme-grapheme correspondence to assemble an appropriate spelling” (Doval-Suárez 2004:58). According to this model, the

phonological process is capable of producing the correct spelling of regular words, while the visual process is more appropriate for irregular words.

Other important names in this area are Bryant and Bradley (1985) who agree with Frith on the idea of spelling as different processes, although they argue that the “phonological awareness is the casual factor in the development of reading and spelling, and that it appears in spelling before it appears in reading” (Doval-Suárez 2004:65).

One investigation that has contributed to the awareness of the importance of metacognition, learning strategies and learning styles was undertaken by Carrell, Pharis and Liberto (1998). A group of students were divided into three groups; the first two groups underwent training in two different learning strategies while the third group received no training. They were then tested on their ability to answer multiple choice comprehension questions. The researchers also included a measure of learning style in the test. The result suggested that strategy training gave an improved second-language reading. It also confirmed that there is a relation between personal learning styles and strategy training (Hedge 2001:81).

3. Method and Material

3.1 Chosen learning style dimensions

Due to the vast number of different classifications on learning styles, I had to select only one or two dimensions for further investigation. The two dimensions that seemed easiest to determine in a questionnaire were the sensory channel style and the cognitive styles, mentioned by Ehrman’s (1996). I find the sensory channel dimension interesting as it feasible to expect a visual student to spell better than an auditory or kinesthetic one. However, it is also possible that the auditory student is a skilful speller as he/she might “hear” the spelling in his/her head. A third reason for my interest is that I myself am a visual student; nevertheless, spelling has always been one of my weaknesses. Furthermore, the six cognitive styles (Sequential-random, deductive-inductive and concrete-abstract), were included in the investigation to contribute more factors that could effect one’s spelling ability. Considering the special aims and the limited scope, personal related models were not included.

3.2 Subjects

The questionnaire was carried out in an upper secondary school in a wealthy area in Gothenburg. The students are 17-18 years and the majority have studied English for seven to eight years. I managed to get two classes (around 40 students) to participate in my questionnaire. A larger corpus would be of greater relevance; nevertheless, this study gives some indication as to the supposed connection between learning style and spelling ability. The first class studies liberal arts (music) and the second, social studies. The personal variables included in the questionnaire were age, sex and mother tongue. However, I chose not to include factors such as social stratifications or ethnicity as those factors would have been more relevant if I had chosen to include personal related models.

3.3 Questionnaire

The questionnaire consists of two parts, the first of which was designed to analyse the students' preferences on learning styles. Statements on how they think, act, remember and what they prefer in learning situations were answered with one of the following options; *I totally agree/I agree/ I do not agree/ I do not agree at all*. There are three statements on each style, that is, three to determine if the pupil is visual, another three to determine if he/she is auditory, etc. By using several assertions to determine the students' preferences, the result is more trustworthy than if I were to base my analysis on just one. Furthermore, two statements in which one answer excluded another were included to cheque the reliability of the student. That way, pupils that agreed on both statements have been excluded from the calculations. This part is based on a questionnaire on personal learning techniques from Ehrman's book *Understanding Second Language Learning Difficulties*.

The second part consists of three spelling tests. The first test is a word-by-word translation from Swedish to English. As I am searching for a specific word, we reviewed the answer in English orally to avoid synonyms or gaps. The words represent different kinds of spelling problems, such as, silent letters (*whole, doubt and knight*), consonant doubling (*install, disappear and innocent*), vowels and diphthongs (*friend, weight and hour*) and homophones (*brake/break, weather/whether, and their/there*). In the second test, the pupil is asked to choose the correct option between two alternative spellings and the options; *both spellings are correct* or *none is correct*. In this part I included words that are spelled differently in American English and British English to analyse the awareness of this

phenomenon. The third spelling test is free writing, where the student is asked to invent a story or a fairytale based on two pictures. This part is more difficult to correct as one can misspell more or less depending on the length of the story and the level of the language. Therefore, I used this part to confirm the results from the other two parts, that is, whether the student's spelling is good or poor.

Lastly, there is a question about the pupil's motivation, were he/she has to define how important he/she thinks spelling is. The second part of the questionnaire was partly based on words from Ida Fagerberg's *English Spelling in Swedish Secondary School* (Fagerberg 2006).

4. Results and Discussion

4.1 Overview of good and poor spellers

As the aim of this study is to determine if there is a correlation between learning style and spelling ability, the first task was to establish what a "good speller" and a "poor speller" is. After correcting the second part of the questionnaire (which is the spelling test), the median was calculated to 26 correct answers of 40 possible, that is, the average student got 65 percent of the words right. As a result, it seemed reasonable to conclude that the "good spellers" should be those who got 30 or more words right and the "poor spellers" were those who got 20 or less words right. Calculations gave 16 good spellers and 14 poor spellers. Henceforth, the average student is not considered in the results as he or she is not relevant to this investigation.

The first questions in the questionnaire concern gender, mother tongue and studies of the student. The results showed that 51 percent of the subjects were girls, only 10 percent did not have Swedish as native language, 49 percent were studying liberal arts (music) and 51% Social studies. Due to the low number of subjects with another language than Swedish as mother tongue, I chose to not include that factor in my research. In figure 1 below, the distribution of poor spellers and good spellers between the variables "Gender" and "Studies" is demonstrated.

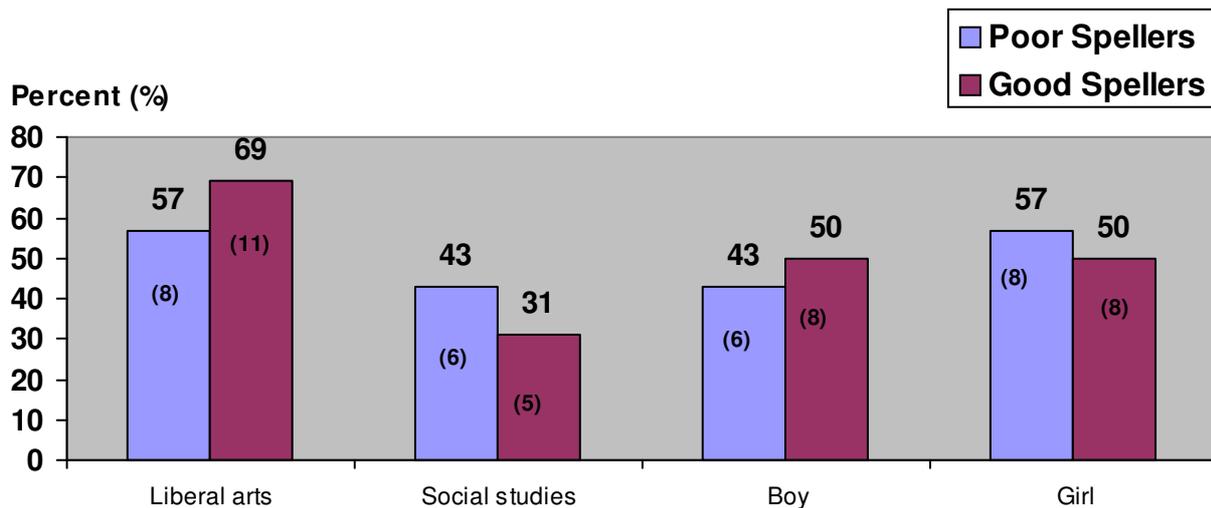


Figure 1: Gender and Studies

In the figure above (and for all following figures) the percentages are presented first, and then below that, in parentheses, the absolute numbers can be found. As one can see, there are no great differences between boys and girls. Girls have a slightly higher number of poor spellers; nevertheless there are as many boys as girls among good spellers. Besides, there is a higher percentage of poor and good spellers in the class of Liberal arts than in Social studies. As social related models have not been included in this survey, figure 1 will merely serve as an overview.

4.2 Sensory Channels

The next figure shows the connection between the students' spelling ability and their sensory channel preferences.

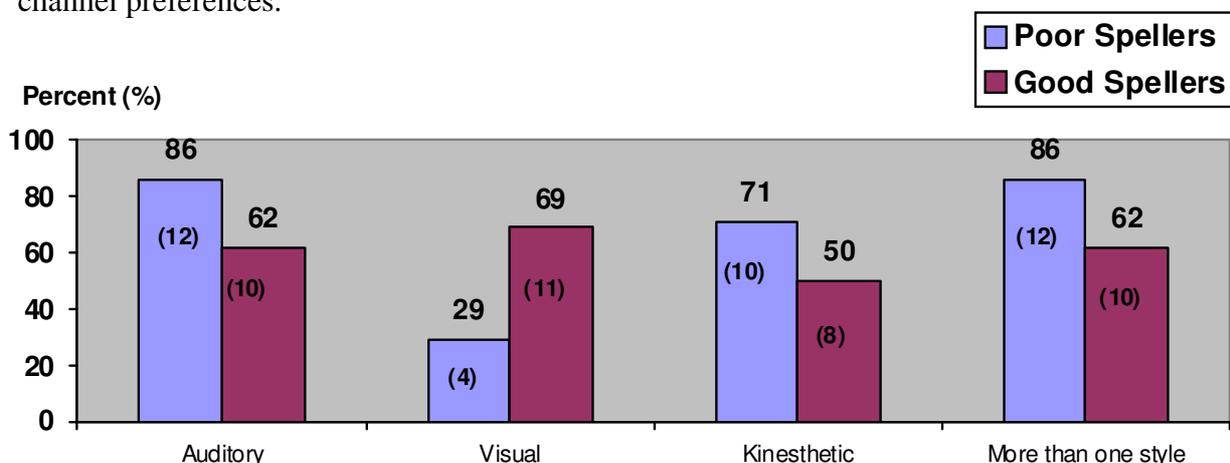


Figure 2: Sensory Channels

There is a high percentage of students with more than one style, more specifically: 86% of the poor spellers and 62% of the good spellers. In accordance to the *dual route model of spelling*, a student who is both auditory and visual should be the most successful speller. However, this investigation shows that the most common combination is auditory and kinesthetic, among both good and poor spellers. This could be a result of the over-representation of music students. Furthermore, the words that were tested in the questionnaire were mostly irregular ones, which should give the expected pattern that visual students manage better. As mentioned earlier, the visually oriented student learns through the eye and uses images to help remember. That way, he or she can remember the image of the word and is therefore not likely be confused by its pronunciation. On the contrary, the auditory student might pronounce irregular words correctly and thereby spell them as they sound. Finally, it is not surprising that poor spellers are more likely to be kinesthetic, as reading and writing normally requires that the student sits still.

4.3 Cognitive styles

In order to illustrate the results of the cognitive styles as clearly as possible, they will be represented separately, starting with the dimension random/sequential.

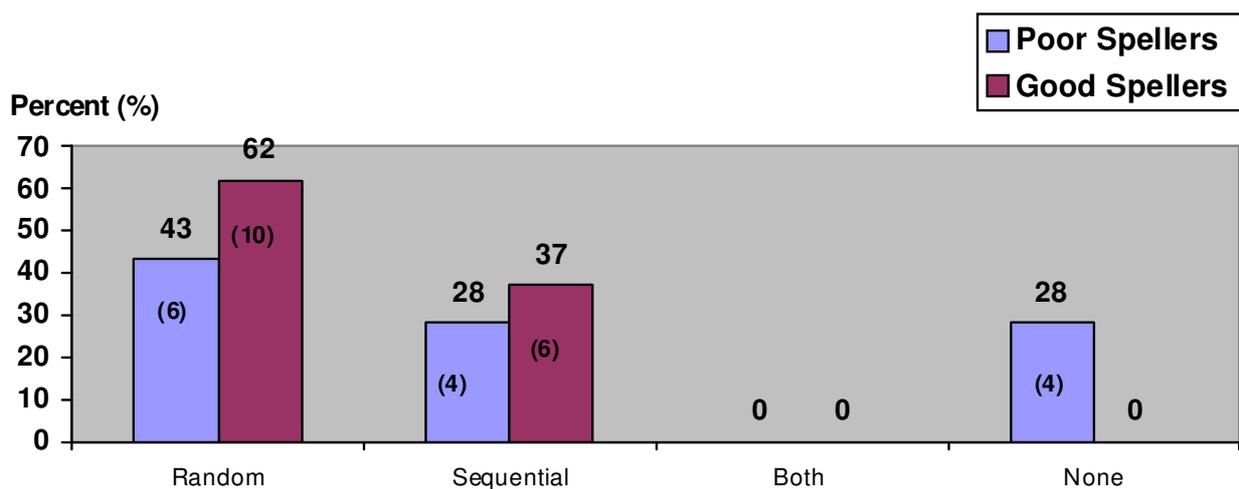


Figure 3: Cognitive styles 1

Figure 3 above shows a high number of random learners among both good and poor spellers. According to Ehrman “random learning is high risk and high gain” (1996:66), that

way, skilled random students may have a greater possibility to learn than sequential students. Nonetheless, she also stresses that unskilled random students tend to overestimate their ability to cope with ambiguity and end up in situations that they cannot handle. This should explain why both good and poor students can be random. Another explanation to why the skilful speller is more likely to be random is that he or she stores data in different places and has therefore easy access to it when needed. Furthermore, he or she does not let ambiguity, like irregularly spelled words, disrupt the learning process like sequential learners often tend to do (Ehrman 1996:64).

The 28% of poor spellers who were neither random nor sequential, could be interpreted as being what Ehrman (1996:55) calls *style flexing* student, which refers to a learners ability to shift style depending on the situation. However, this ability is advantageous to the student and should therefore lead to skilful spellers, which is not the case here. In the questionnaire, the statements to this learning style dimension concerned the ability of dealing with several projects at the same time versus the need to finish one project before starting with another. The 28% of students who could not relate to any of these styles might not have developed a strategy for these specific situations and are consequently less skilful learners.

Secondly, the good spellers’ preferences concerning inductive and deductive learning style showed to be almost conclusively deductive, whereas poor spellers were inductive to some degree. The results are illustrated in the following figure.

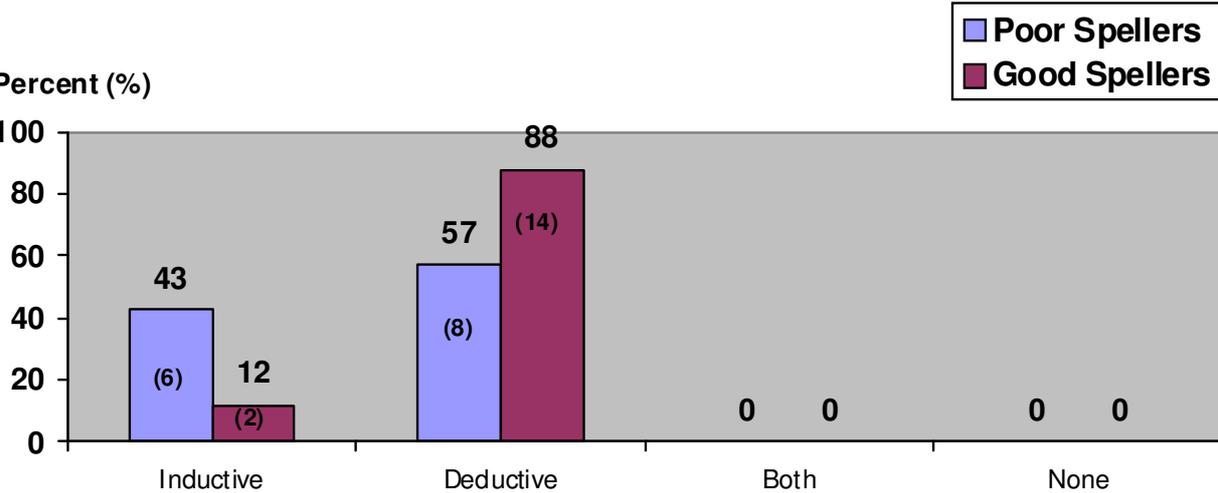


Figure 4: Cognitive styles 2

A deductive student prefers to learn the rules first and then apply it to specific cases while an inductive student begins with the data and seeks the generalizations that can be

extracted (Ehrman 1996:72). One problem with inductive learners that Ehrman discusses, is that they may use their time inefficiently, trying out rules and seeking patterns. That way, it is logical that the deductive student is the better speller. Ehrman also draws a parallel between deductive and abstract learners, as they both are oriented to form before meaning. Consequently, the final result on cognitive styles should show that there are more abstract learners than concrete.

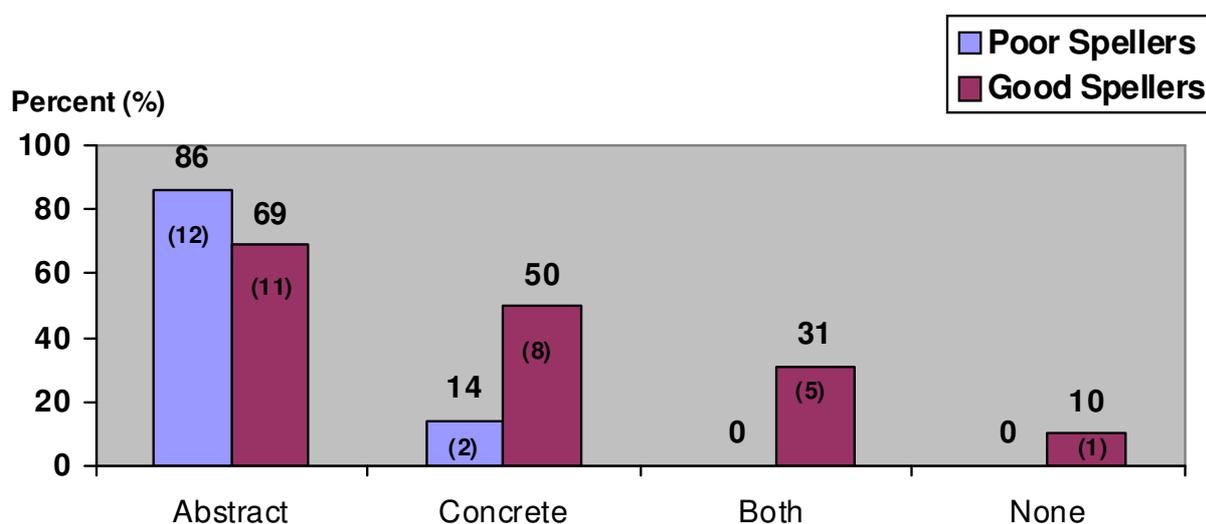


Figure 5: Cognitive styles 3

As expected there are more abstract learners than concrete ones. However, it is surprising that the majority of the poor spellers consider themselves to be abstract learners, since spelling is an abstract process. Ehrman states that abstract students “are likely to pay attention to issues of accuracy” (1996:70). What is more, it is not expected that the majority of the concrete learners are good spellers as a typical concrete student has trouble with learning rules and dealing with language as a system (Ehrman 1996:69). The statements in the questionnaire concerning the dimension abstract/concrete treat the need to be able to apply the things one learns to “real life situations” and the student’s attitude towards grammar. The high number of abstract learners indicates that few students find it necessary to be able to apply the things they learn to “real life situations” and the majority have a positive attitude toward grammar. Perhaps the statements should be formulated differently to comprise more factors of abstractness than grammar in order to give a more rewarding result. Besides, one could interpret these results as a sign that spelling, to a certain degree, is a concrete operation. As mentioned earlier, the concrete learner prefers to use the language rather than talk about it. One way of using the language is to write and read, that way the learner gets to practice spelling, which should lead to more skilful spellers.

4.4 Summary of learning styles

Finally, the result of the questionnaire has showed that the most successful combination of learning styles, concerning spelling ability is the following:

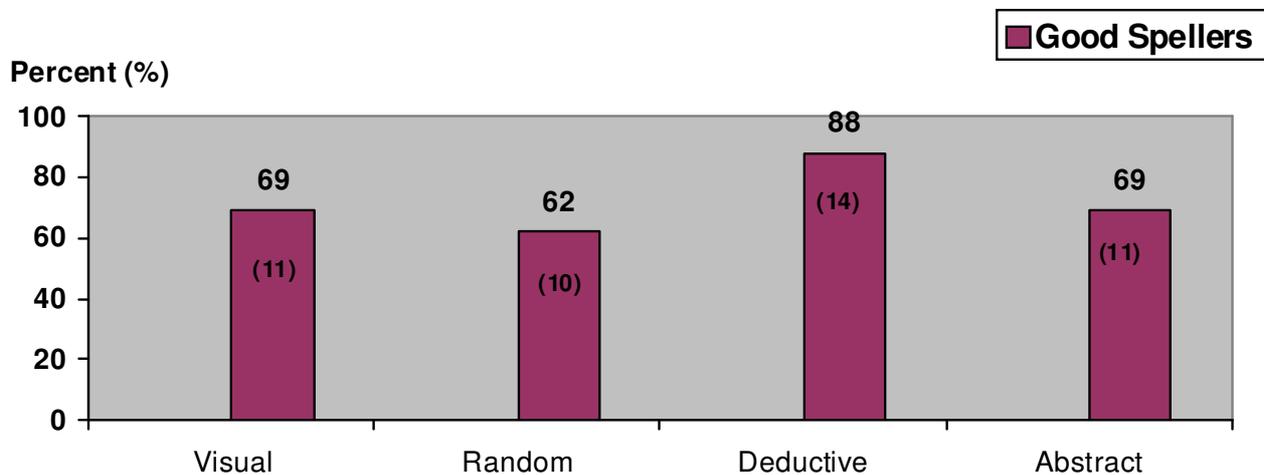


Figure 6: Learning styles

Regarding learning styles, one should keep in mind that they are complementary and should be understood as “comfort zones” that may vary from situation to situation. That way, one preference does not exclude another, on the contrary, as many as 62% of the skilful spellers in this study have more than one sensory channel preference. The second strongest is the auditory style, which in this case could be a result of the high representation of music students from the Liberal arts. Among the cognitive styles, random, deductive and abstract learners are more likely to be good spellers.

4.5 Types of spelling errors

In the following section, the types of spelling errors that poor and good spellers committed are analysed. This is based on the results of the second part of the questionnaire; the translation from Swedish to English and the multiple-choice test. After having studied the errors, it seemed reasonable to organize them into five different groups: 1) differences between American and British English, 2) silent letters, 3) consonant doubling, 4) vowels and diphthongs and 5) homophones. To the first group, it should be added that those students who are not aware of the differences between American and British English do not necessarily commit spelling errors. When writing they may use one of the two possible spelling forms.

However, in the questionnaire, they showed that they believed the other form to be wrong and that is why it is considered an error. Some examples of silent letters from the questionnaire are the *h* in *honest*; the *b* in *doubt* and the *w* in *whole*. Furthermore, I have considered a consonant doubling error to be both omitting and adding consonants, that is, if a double consonant is written as a single, it is omission, if a consonant is doubled unnecessarily, it is addition. Some vowel and diphthongs errors are, for instance, *waight* (weight), *toung* (tongue) and *disapper* (disappear). Finally, the homophones included in the spelling test are words that sound the same but are spelled differently, like, *weather/whether*, *their/there*, and *break/brake*. The result is illustrated in figure 7.

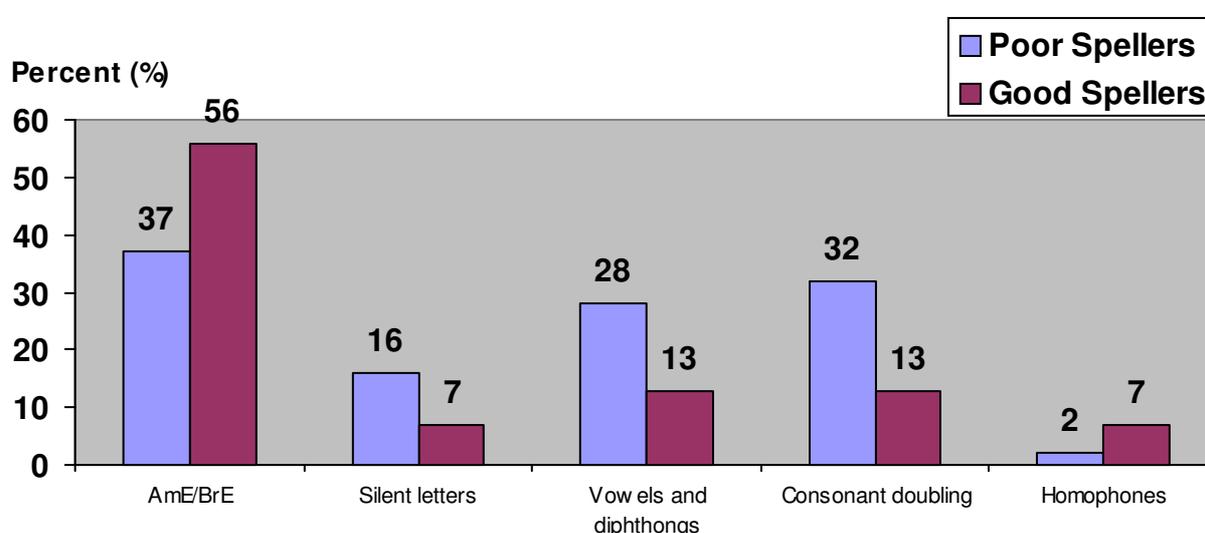


Figure 7: Spelling errors

The figure shows that neither good nor poor spellers are well aware of the difference between American English and British English. In the case of the skilful spellers, as many as 56% of the errors turned out to belong to this group. An important fact to highlight here is that even though the percentage of errors is higher among the good spellers than the poor ones, the number of mistakes were lower (30 among good spellers and 42 among poor spellers). One possible explanation to the scant awareness to this difference is that the teacher has not put much importance in informing his/her student about this area and accepts both forms when correcting their texts.

The second group, silent letters, does not pose any problem at all to the skilful speller and little problem to poor spellers. These words are highly irregular and should therefore be more problematic to concrete and auditory learners than to abstract and visual learners. As the results above show that good spellers are visual to a high degree and both good and poor spellers are more likely to be abstract than concrete, this should serve as an explanation.

Furthermore, the same explanation should apply for the third group, consonant doubling, which turned out to be slightly higher among poor spellers than good spellers.

Concerning ‘Vowels and Diphthongs’ group of errors, the figure shows that this is somewhat more problematic to poor spellers (28%) than to good spellers (13%). This error ought to be more typical for an auditory student as he or she spells words as they sound. Accordingly, figure 2 demonstrates that poor spellers are auditory to a higher extent.

Finally, good spellers seemed to confuse homophones more than poor spellers, both by percentage and by number of errors. These words were included in the translation section, that is, the student was asked to translate words like *väder*, *deras* and *bromsa*. While as the poor spellers who got these words wrong made different kinds of spelling errors, all good spellers confused them with their homophone. That way, just by looking at the word it appeared correct. Once again, the fact that good spellers are more likely to be visual, seems to be a reasonable explanation to this phenomenon.

4.6 Students’ motivation

The last question in the questionnaire concerned the importance of spelling and the results were not surprising. As figure 8 shows, 50% of the good spellers think that spelling is very important and the other 50% think that it is important. The figure also shows that most poor spellers find spelling important; only a small number find it very important or not important at all. Earlier results have showed that the majority of students are abstract (both poor and good spellers) and Ehrman (1996:70) states that abstract learners value issues of accuracy, like spelling. Other learner types that might value spelling are sequential students, due to their reluctance to ambiguity, while as the random learner could find it less vital.

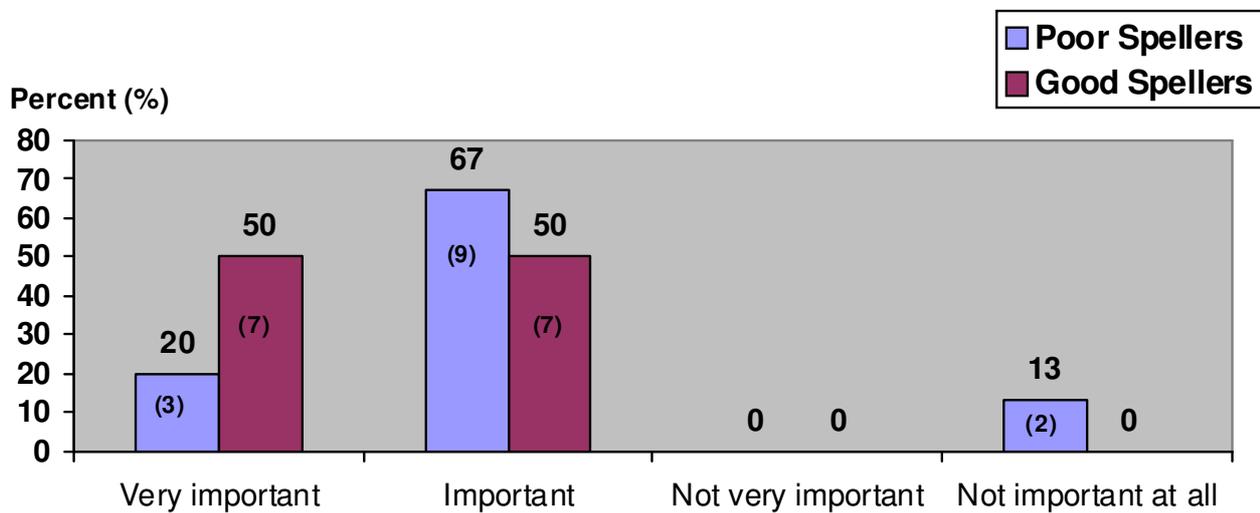


Figure 5: Students' motivation

4.7 Pedagogical implications of the study

In the introduction, the importance of metacognitive awareness on behalf of the student was mentioned. This awareness is expressed and highlighted several times in the syllabi of English in upper secondary school. For instance, under the heading *Goals to aim for* it is said that “The school in its teaching of English should aim to ensure that pupils: [...] take increasing responsibility for developing their language ability (English n.d, *Skolverket* [online]). Later on, under the heading *Structure and nature of the subject* one can find that: “An additional competence is an awareness of the process involved in learning a language” (English n.d, *Skolverket* [online]). Finally, one of the goals that students should have achieved by the end of the *English A* course is to “be able to consciously use and evaluate different approaches to learning in order to promote learning” (EN1201 English A (2000) *Skolverket* [online]).

As it is the teacher’s duty to enable the achievement of these goals, they must offer their students the necessary devices to investigate different learning approaches and the time and space to individually use and evaluate them. However, the traditional classroom situation derives from the idea that all students should do the same activities in more or less the same time. Those who manage to finish on time are considered to be the more competent pupils, while as those who need more time are defined as weak learners. Little consideration is taken to the fact that the teacher approach benefits some students more than others. Regarding the sensory channels, for instance, the kinesthetic learner is strongly disadvantaged in school as most activities require sitting still. Furthermore, the results show a strong preference for the deductive style, which not only emphasizes the learner’s inclination for that particular style, but also indicates that the teacher approach is deductive. If the student is only exposed to one

type of teaching methodology, he or she will develop the corresponding style and as a consequence feel insecure about the opposite style. Ehrman (1996) stresses the importance of training one's weaker learning preferences in order to become a more successful learner and offers different exercises for this purpose throughout the book. She further explains that there is no conclusive answer to which style is the most convenient for learning language; rather, she declares, it is the *style flexing* learner who is most likely to succeed (1996:55).

One way to facilitate the students' metacognitive awareness is to implement *Learner autonomy* in class. A forerunner to the idea of learner autonomy, Henri Holec, defines it as "the ability to take charge of one's own learning" (Tholin 2001:214). Jørgen Tholin, a teacher who has been working with this concept for thirteen years, explains that Learner autonomy in Sweden has come to refer to three aspects: 1) successively letting the pupil take more responsibility for his/her learning, 2) making the pupil reflect over his/her own learning in order to make more conscious choices and 3) training students to see their learning in a social context and learning how to cooperate (Tholin 2001:214). Regarding spelling ability, this study has showed that some learning styles are more successful than others. If all students were given the possibility to develop these styles they would probably be more skilful spellers. It is also reasonable to think that other learning styles are advantageous when developing other language proficiencies, such as listening or reading comprehension. By implementing learner autonomy in school one increases the metacognitive awareness among the students, which in turn should lead students to develop more learning styles and finally help in developing more skilful language learners.

5. Conclusion

The results of this investigation show that there is a connection between learning style and spelling ability. Regarding the sensory channel dimension, the successful speller turned out to be predominantly visual. Moreover, the results show that the majority of students, both good and poor spellers, learn through more than one sensory channel and that the poor spellers are more likely to be kinesthetic.

Concerning the cognitive styles, the skilful spellers tend to be random while the poor spellers are more difficult to classify, as they showed to be both random, sequential and had a high percentage of neither random nor sequential. Furthermore, the majority of both good and

poor spellers are deductive, which can be a result of teacher approach. However, poor spellers have a higher percentage of inductive learners than good spellers, which leads to the conclusion that the inductive style is less suitable when learning how to spell. The last cognitive style gave doubtful results as it showed that most poor spellers consider themselves to be abstract learners, while a great number of good spellers are classified as concrete learners. This does not agree with Ehrman's designation of an abstract and concrete learner, as the abstract one should be the better speller. One explanation to why concrete students turned out to be skilful spellers is that the typical concrete learner prefers using the language (read, write, talk) rather than talk about it. Consequently, by writing and reading he or she gets the chance to practise spelling.

The types of spelling errors that good and poor spellers committed agreed well with their learning styles. For instance, results showed that good spellers did not omit silent letters; neither did they tend to omit or add consonants. This corresponds with the fact that most good spellers are visual students.

Finally, this study highlights the importance of metacognitive awareness on behalf of the student. As results show that learning styles affect language ability, it is important to offer pupils the opportunity to develop their own style, as well as other styles that have been proved advantageous for learners. The notion of metacognition is mentioned several times in both the curriculum for the non-compulsory school system and the syllabi of English, which means that it is within the teacher's responsibility to implement this concept and help his or her students to achieve a metacognitive awareness. Investigations have showed that one way to accomplish this goal is to apply Learner autonomy in class, which stresses the importance of letting students take responsibility for their own learning, as well as becoming aware of the process of learning.

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Appendix

DEL 1

- 1) Jag är en kille tjej
- 2) Mitt modersmål är Svenska annat
- 3) Jag ärår gammal
- 4) Jag gårlinje (NV, Samhäll etc.)

Svara på följande frågor genom att kryssa i ett svarsalternativ.

5) När jag löser en svår uppgift brukar jag prata mig fram till resultatet, även om jag är ensam.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6) När jag läser en text (tyst för mig själv) hör jag orden i huvudet.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7) Jag förstår instruktioner bättre om jag hör dem än om jag läser dem.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8) När jag behöver komma ihåg något från en bok kan jag se framför mig hur det såg ut på sidan.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9) Jag skriver många anteckningar på lektionerna.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10) Jag förstår instruktioner bättre om jag får läsa dem än om jag hör dem.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11) Jag brukar vilja röra på mig när jag pluggar.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12) Jag behöver ta många korta raster eller studiepauser för att kunna koncentrera mig.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13) Jag föredrar lektionsaktiviteter där man är fysiskt aktiv, så som sketcher och exkursioner (utflykter).

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14) Jag måste slutföra en uppgift innan jag kan påbörjar en annan.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15) Jag gillar att ha många projekt på gång samtidigt.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16) Mitt skrivbord ser ut som ett bombnedslag, men jag vet själv precis var allting ligger.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17) Jag listar hellre ut grammatiska system och regler själv än att få dem serverade av läraren.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18) Jag föredrar att läraren först lär mig grammatiska system och regler, som jag sedan får övar på att använda i olika typer av uppgifter.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19) Jag blir nervös när jag förväntas lista ut regler och system själv.

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20) Jag tycker att det är svårt att lära mig något som jag inte kan använda i "verkliga livet"

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21) Jag tycker grammatik är lätt och har inga svårigheter att använda grammatiska termer (så som första, andra och tredje person/ adjektiv, adverb/presens, futurum etc).

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22) När jag skriver prov föredrar jag att bevisa att jag kan använda min nya kunskap hellre än att skriva *om* den. (Ex. Jag skriver hellre ett brev där jag bevisar att jag kan använda -ing formen än att skriva om hur, när och varför man använder den)

Instämmer helt	Instämmer	Instämmer inte	Instämmer inte alls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DEL 2

1) Översätt följande ord till Engelska

bromsa	deras
timme	tunga
strand	vän
köpa	tveka
hela	kläder
vikt (kilo)	riddare
ärlig	försvinna
väder	kontroll
instalera	oskyldig
häst	tuff

2) Kryssa i det alternativ du tror är rätt

- | | | | |
|------------------------------------|-------------------------------------|---|--|
| <input type="checkbox"/> aeroplane | <input type="checkbox"/> airplane | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> address | <input type="checkbox"/> addres | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> hopeful | <input type="checkbox"/> hopefull | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> colour | <input type="checkbox"/> color | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> catagory | <input type="checkbox"/> category | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> does'nt | <input type="checkbox"/> dosen't | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> belive | <input type="checkbox"/> believe | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> of coarse | <input type="checkbox"/> off coarse | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> carless | <input type="checkbox"/> careles | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> befor | <input type="checkbox"/> before | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> meter | <input type="checkbox"/> metre | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> apologise | <input type="checkbox"/> apologize | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> excersise | <input type="checkbox"/> exercise | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> forrest | <input type="checkbox"/> forest | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> invicible | <input type="checkbox"/> invisibel | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> realize | <input type="checkbox"/> realise | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> Wensday | <input type="checkbox"/> Wednesday | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> diferent | <input type="checkbox"/> diffrent | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> dificult | <input type="checkbox"/> difficult | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |
| <input type="checkbox"/> licence | <input type="checkbox"/> license | <input type="checkbox"/> both are correct | <input type="checkbox"/> none is correct |

3) Beskriv vad du ser på bilderna och hitta på en berättelse om vad du tror händer (på engelska). Låt fantasin flöda. Skriv minst sidan ut, du får gärna skriva mer på baksidan.



Marc Chagall - Musée National Marc Chagall



4) Hur viktigt tycker du det är med stavning?

Mycket viktigt

Viktigt

Inte så viktigt

Inte viktigt alls

Tack för ditt samarbete!