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The amount of French text messaging related to spelling level: why some letters are produced and others are not?

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ABSTRACT

All spellers do not modify randomly when they use Digital Writing in Instant Messaging. Some letters are written, not written or replaced and we tried to provide in-depth understanding of the underlying reasons for the phenomenon. One could choose to type the word “arrête” with one “r” (since all the other letters have a basic value, or the most frequent value) as s/he may consider the other “r” as useless (since it has a zero value). Students wrote two dictations: the first on a sheet of paper; the second on an instant messaging website. Results showed that students rarely modified letters with a base value, but mainly modified other letters (e.g. with a zero value). As a conclusion, the fact that adolescents preserved, replaced or did not write letters according to their value proves that the use of modifications (or textism) in French does not leave anything to chance: it is based on the spelling system itself.

Keywords: *Spelling, Traditional Writing, Digital Writing in Instant Messaging, Values of letters, Teenagers.*

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1. Introduction

The use of digital writing, which differs from correct spelling as it includes modifications if compared to the orthography of words, may have an impact on the quality of spelling. Taking the spelling level into account can be considered as a starting point to answer this question. Teenagers who produce digital writing make a priority of being understood, but they still have to meet the requirements of the situation of communication. That is why they have to type words quickly and sometimes have to modify spelling, but it seems that they do not modify words randomly, which shows

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implicit orthographic knowledge. We intended to show why some letters display greater frequency of preservation/modification than others in instant messaging[1].

We will present (a) the components of the orthographic learning process and (b) will draw up an inventory of research on the area of the use of writing on digital media.

1.1 Opening Doors to Reading and Writing: The Orthographic Learning Process

The child develops oral skills, which allow him communicating with others. In response to such needs, the child learns how to communicate through a linguistic rule-bound system. One particular tool will lay the basis for learning (Rey and Carlotti, 2008). It is defined as the phonological awareness (Bosse, 2005; Demougin, 2003; Plester and Wood, 2009a). Through this tool, the child learn to distinguish phonemes (i.e. the smallest unit of sound, Cellier, 2003), which are the constituent parts of speech. The phonological awareness will help the child to open doors to reading and writing, and to use the sound-spelling correspondence to speak, read and write (Cellier, 2003).

As Rey and Carlotti (2008) mentioned, phonological awareness allows the acquisition of every other tools related to literacy (i.e. the addition of reading and writing, Tran, Trancart and Servent, 2008). If we consider writing, Caravolas, Hulme and Snowling (2001), and Hulme et al. (2002) showed that children who developed their phonological awareness enough open doors to writing earlier than others. Having an effective phonological awareness would help the child considering words as a set of syllables. The child understands that one letter could get different values when he learns how to speak and write.

But knowing how to decode/encode syllables is not sufficient to understand how a child can write. The dual-route model indeed includes two writing strategies: (a) the direct route which helps to decode/encode at a glance a familiar or irregular word, and (b) the assembled route which allows decomposing the word into its constituent graphemes in order to write new words (Bouillaud, Chanquoy and Gombert, 2007). Then, a writer identifies a set of letters, which acquire their value according to their position in the word. Writing relates to phonology, morphology, lexicology, syntax and semantics (Alegria and Mousty, 1997; Rey and Carlotti, 2008). The nature of the word, but also the values of letters have a consequence on the selection of the writing strategy.

[1] This study only focused on French instant messaging.

The letters without any phonic value (or “zero value letters”, Benveniste and Chervel, 1969; Catach, 1980; Cellier, 2003 - see Appendix A for further details -) are indeed ubiquitous. If some letters do not have any semantic value (e.g. the “s” at the end of the French word “alors”), others might provide information, and then correspond to morphemes (Jaffré, 2003; Rey and Carlotti, 2008) – or the smallest units of meaning (Cellier, 2003). Morphological characters provide information (such as the final “s” included in the word “voyages” in French, which means that there are several “voyages”), or allow lexical derivation (e.g. the letter “t” in the word “chat” – “cat” in English – is a clue that helps producing the word “chaton” – “kitten” in English) (Doneux, 2001). More broadly, Rey and Carlotti (2008) reported that the “morphologic awareness” does exist (e.g. the digraph “ai” in the word “clair” is very useful, since the letter “a” helps to produce the word “clareté”). The letter “s” which helps a writer to find automatically the plural form of French nouns and adjectives, gets a phonic value when it is in “liaison” (e.g. “les journées portes – ouvertes”, so we would say that when this letter is in “liaison”, it would be written in DWIM). It is the same thing for the French morpheme “-ent” which indicates the third person plural of numerous verbs in French and gets a phonic value in interrogative sentences (as in “Restent-ils?”, Doneux, 2001). This morphologic awareness would be developed through our mnemonic abilities and our etymologic, diachronic, and synchronic knowledge (e.g. the “g” in the French word “doigt” helps inflecting “digital”).

Meeting occurrences during reading and writing activities helps recognizing written regularities and irregularities. This is how children are able to make the difference between spelling standards (which have been created, and still are, by an institution, Fayol and Jaffré, 1999; Rey and Carlotti, 2008), so that the users would communicate through the same code. But usually, this code is not used as it should on new communication media, and specifically on Instant Messaging.

1.2 Implicit Orthographic Knowledge Allowing Digital Written Production

Reading, writing and orthography are three literatian abilities that are closely linked. We are able to write on every kind of media thanks to these three components. To explain the development of this ability, it appears necessary to dwell on the concept of phonological awareness. It is mentioned in most part of studies on the arera that phonological awareness plays a crucial part in spelling acquisition (Demougin, 2003; Plester and Wood, 2009a; Rey and Carlotti, 2008). The hearing is linked to the development of phonological awareness and orthography, while the sight is linked to

reading (Bruck and Treiman, 1990; Frith, 1979). It would explain why the written forms that are used on digital media appear to be phonetized. More broadly, Doneux (2001) made the difference between writing and spelling: writing would be a transformation process, since writers produce visual contents directly based on sound elements. Orthography is an activity of comparison between the information that is stored in the spelling lexicon and the written words that are actually produced (Doneux, 2001).

In Frith's model (1985), reading and spelling are closely linked. Skills in reading indeed include three phases of development, the last of which is orthographic. He defines the first as logographic, since there is no need to follow the phonic route to identify words. The alphabetic phase develops simultaneously and allows the learner using the alphabet to rely on phoneme-grapheme relationships (Frith, 1985) by decoding/encoding letters one after the other. Then, s/he realizes that this strategy is not effective when it comes to decoding/encoding words with an opaque spelling. That is why s/he uses a different strategy, which takes place each time s/he meets spelling standards to build orthographic knowledge. The user understands that each letter of the alphabet can take a different value according to its linguistic environment (i.e. it corresponds to the orthographic phase). If this model is not called into question according to the identification of these three phases, some authors disagree with the conception of a multi-step process and prefer to qualify it as connectionist (Bouillaud et al., 2007). Every phase contributes to the expansion of the spelling lexicon, which is specific to each of us (Doneux, 2001).

The development of this mental lexicon results from explicit and implicit learning (Fayol and Jaffré, 1999). Therefore, if explicit learning refers to situations in which the learner is trained (Fayol and Jaffré, 2001), implicit learning relates to the acquisition of processes that takes place beyond her/his control and gradually becomes automatized (DeKeyser, 2003). The learner is not aware of what s/he acquires, since s/he does not organize the information that s/he passively stores (Hayes and Broadbent, 1988).

As a consequence, orthographic learning is firstly explicit since a child seems able to explain why s/he puts an "s" at the end of the second word in the expression "mes parents". But this learning is also implicit since s/he knows s/he has to put an "s" at the end of the French verb "avais" to choose the correct spelling that refers to the first and second person of singular. The concept of values of letters related to implicit learning is defined by Benveniste and Chervel (1969); Catach (1980); and Cellier (2003). The child develops abilities related to this concept that will allow her/him to spell some words at the very moment s/he open doors of reading and writing, without learning the

different values of letters as they are presented in the following table (see Appendix A for further details).

If some letters (or groups of letters) are often unused in DWIM, it seems that it does not leave anything to chance. A French-speaking user would make orthography simpler and more transparent when s/he produces DWIM.

In order to define writing when it is used on new digital media of communication, few studies focused on a comparison between traditional writing (that includes the use of correct spelling) and digital writing (where the user can modify the spelling of words). Many typologies based on SMS production analyses were built in order to identify the different kinds of modifications[2] that helped to set out the definition of digital writing (e.g. Anis, 2003; Fairon, Klein and Paumier, 2006a; Liénard, 2008; Simoës-Perlant et al., 2012; Véronis and Guimier de Neef, 2006). Some typologies were based on the written production of adults (i.e. Falaise, 2005; Panckhurst, 2009) and others on the production of teenagers (Lanchantin, Simoës-Perlant and Largy, 2013). These authors indeed recruited participants who developed spelling abilities while using digital and correct writing. The teenagers who participated to the study chatted during one hour with someone they knew. The data analyses helped to identify three main categories. These categories are based upon the alteration/respect of the phonic value, with (a) additions (e.g. “aaaaaah”), (b) substitutions (e.g. “u” instead of “you”) and (c) reductions (e.g. “tmw” for “tomorrow”). These authors showed that most of the words were not modified (these words that are not modified are called “hotbeds of resistance”, Fairon, Klein and Paumier, 2006b).

These results could mean abilities to read and write are deeply rooted in our memory. Plester, Wood and Joshi (2009b) were the first to see that these abilities were involved in SMS productions. They have successfully demonstrated that participants between the age of 10 and 12 years who owned a mobile phone more strongly developed their phonological awareness than those who did not own such a tool. Concerning spelling, Bouillaud et al. (2007) also analyzed their data according to digital knowledge. They were able to conclude that French-speaking students enrolled in 5th grade, regular users of digital tools and good spellers, were those who created modifications the most. Lanchantin et al. (2013) were able to show that the spelling level was quantitatively correlated to the production of modifications, which means that students with a good spelling level were able to produce more modifications than those who had

[2] Panckhurst (2010) used the word “eSMS” to describe every kind of written production on a digital media. We preferred the more global word “modification” to describe every kind of written form which challenges spelling standards in digital writing.

a bad spelling level. This work results from the study of Plester, Wood and Bell (2008), who got the same results than Bouillaud et al. (2007) among English-speaking students enrolled in 5th grade. Furthermore, Coe and Oakhill (2011) showed that teenagers with a low reading level spend more time using their mobile phones than teenagers with a good reading level. The good readers created more textism and read texts and messages written on traditional support more quickly than bad readers.

If we consider now the possible correlation between the use of digital writing and its impact on the quality of spelling, Plester and Wood (2009a) proved that the English-speaking child appropriately adjusts her/his written production to the situation (i.e. on a sheet of paper for traditional medium, or on an instant messaging website for digital medium). The results of DeJonge and Kemp (2012) showed something similar, since no matter the kind of medium used to write digital writing, their participants still produced the same modifications. It means that the teenagers and adults who participated to the study used textism both on a sheet of paper and on a mobile phone. More broadly, Drouin and Davis (2009) asked 80 college students to use texting after having established two groups according to their participants' literacy skills (i.e. low and high). They concluded that there was no significant difference between both groups if we consider the proportion of modifications. In other words, the use of texting is not correlated to low literacy performance.

This study aims at showing that the DWIM user does not modify words randomly and that s/he relies on her/his implicit spelling knowledge related to values of letters to create modifications. Therefore, we chose to compare both situations of production (i.e. correct writing vs. digital writing).

Revealing the existence of performance difference or similarity between a spelling production in correct writing and in DWIM would contribute to prove that DWIM users would be able to distinguish written production situations and to adjust their behaviour according to the medium on which they write. It would prove the existence of orthographic knowledge used by students to create modifications (their performance will be measured through the respect vs. alteration of the values of letters).

This research follows up on the study of Lanchantin et al. (2013), who have concluded that some letters seemed unmodified in traditional writing and in DWIM. Thus, we assume that spelling performances would be different in accordance with the kind of medium (i.e. correct vs. digital on instant messaging). We suppose that base values without duplication (except the base value of the letter "e", which in French has three diacritical accents and thus causes lots of hesitation from French spellers) and

some digraphs and trigraphs without useless duplication (e.g. in French: “ou” and “oin”; in English: “en” and “oin”), are produced on both kind of media. In contrast, other values of letters, such as auxiliary value, zero value, or position value and also some digraphs and trigaphs considered as useless duplications of smaller units (e.g. in French: “ai” and “eau”, phonic equivalents of the letters “é” and “o”; in English: “ee” and “sch”, phonic equivalents of the letters “i” and “sh” in the words “steel” and “schilling” for instance) and lots of grammatical morphemes, would be easily replaced or deleted in DWIM, if we refer to spelling standards.

The innovative character of the study lies in the fact that we will no longer focus on global spelling production, but on infrasyllabic units related to values of letters.

2. Method

This study aims at showing that eighth-graders would rely on their implicit spelling knowledge to create modifications in DWIM. They may not produce modifications randomly. Only some categories of letters would be written, replaced or not used, and others would be preserved no matter the kind of media (i.e. a sheet of paper vs. an instant messaging website).

2.1 Participants

Forty voluntary participants have been invited to perform a task (mean age: 13.225 years [0.48]; 22 boys, 18 girls). They all have been assessed on their spelling abilities and on their use of traditional and digital tools. Participants were asked to answer to a French Spelling Test (or FST, Doutriaux and Lepez, 1994) and also to an 18-item questionnaire (Lanchantin, Simoës-Perlant and Largy 2012) that focused on their traditional and digital reading and writing habits.

The FST is a multiple choice test that includes 90 items. It is a test that includes two parts; the first assesses usual spelling and the second assesses the application of grammar rules (cf. Appendix C). It helped ensuring that none of the participants had language disorder and to ensure there was as much good as bad spellers (with a significant difference between both control group, $t(39) = 10.076$, $p < .004$). The 18-item questionnaire allowed controlling everyday reading and writing activities on both media (i.e. a sheet of paper vs. an instant messaging website) and everyday use of

computer with wireless access. All participants were eighth-graders so they must have developed strong spelling abilities (data are available in Table 2).

Information	General data
Gender	22 boys; 18 girls
Mean age	13.225
Standard deviation (age)	0.48
Mean score (FST)	34,85
Standard deviation (FST)	4,7

Table 2. Gender, average age and standard deviation (age), average FST score and FST standard deviation

Ethical Clearance and Conflict-of-Interest Disclosure

We ensured respecting the French "Behavioral Science Ethics Code" (Caverni, 1998). Since minor participants were recruited for research study, we first asked for the head of establishment's permission (who directly asked for students and their parents' approval to participate to the study). Every adolescent who participated to the study gave their free and informed consent and the protection of their identity was guaranteed. Furthermore, we mentioned that they could leave the scientific process at any time.

Our material was built in such a way as to leave no misunderstanding or uncertainty on any matter at all. We ensure no one would feel shocked or hurt by the content of the material and the objective of the study has been clearly defined to participants.

We have committed to communicate the completeness of our results to the head of the establishment, who had to provide our information to participants. We have also guaranteed that we would only use data from which identifying factors have been removed.

We were not bound to any company by an employment contract and did not receive any financial support for conducting this study. Administratively speaking, we only had to ask for the Inspection Académique permission (i.e. the local education authority), the head of establishment permission and their French teachers' permission to meet with

students. The method and approach has been peer reviewed to manage conflict of interest and to guarantee that ethical basic principles were respected.

Students were invited to participate to the study during two hours of French classes, and did not receive any financial contribution for their participation. However, they were highly motivated, since they had to write on an instant messaging website. All these conditions made financial contributions almost unnecessary.

2.2 Material and Procedure of Experimental Task

Two dictations have been proposed to adolescents. Both texts were different; we adapted them to bring them into line with the requirements of the study by establishing a list of target words, which are identical from one dictation to the other (see Appendix B for further details).

To create both dictations, we chose 28 target words that do not lead to (a) the use of nouns of letters in digital writing (e.g. in French, the letter “c” in DWIM is equivalent to the word “c’est” in correct writing; in English, the letter “u” is sometimes produced in place of the word “you”), (b) the use of abbreviations (e.g. “tmw” for “tomorrow”) and (c) the deletion of cedillas, apostrophes, or hyphens (since our study involved letters analysis, and not punctuation’s). The only French diacritical signs that we took into account were accents (circumflex, grave or acute) on the letter “e”, since they are widely used in correct writing, and since two of its three base values have an accent (i.e. “e”, “é” and “è”). We had no other opportunity than proposing an unnatural task to adolescents (i.e. they were not able to write what they wanted on both kind of media), since the objective of the study was to compare their performances for correct writing and DWIM. Both dictations were created according to several conditions.

Traditional Dictation

Our research focused on the comparison of traditional writing and DWIM productions, which explains why we have selected direct speech to create the first dictation on traditional medium, since it is the kind of speech that most closely approximates instant messaging. We produced an adaptation of “Electre” (Giraudoux, 1937) (see Appendix D; “Electre” is a literary work taken from the French “National Curriculum”, 2008). We ensure selecting students who had the appropriate knowledge relating to this kind of speech, since direct, indirect and reported speeches are taught in primary school in France.

Then, we read and dictated the whole text to participants, and reread the dictation in order to let students proofread their production. Proper nouns have been written on the blackboard. We indicated when to skip lines and to put dashes to introduce every tirade.

DWIM Dictation

We chose to use one of the productions included in the corpus in Lanchantin et al. (2012). In this previous study, we collected a corpus that resulted from semi-natural situations of written production on an instant messaging website (for the protocol of this study published in 2012, we asked our participants to write during one hour on the topic of their choice; in case someone needed ideas, two topics of conversation were proposed, but were not mandatory). One of these semi-natural productions was chosen to become the DWIM dictation. We modified names and places to ensure anonymity of people involved. Their pseudonyms were also changed, and replaced by *Interlocutor 1* or *2*. We selected a text written by a boy and a girl (see Appendix D).

We read and then dictated the whole DWIM dictation to the participants, but we did not reread the text to respect real conditions (they were able to reread their production if they wanted to). They were free to spell proper nouns as they wanted since we did not give any clue on their correct spelling. We indicated when to press the “Enter” key.

We invited the participants to write instant messages as they were used to at home. We said that if they were used to produce modifications such as abbreviations, they were allowed to do it. However, if they were not used to do it, they were invited to proceed the exact same way. They were also allowed to use emoticons and every other punctuation signs that are produced in DWIM.

3. Results

The objective of the present study was to show that the preservation of letters from one medium to the other (i.e. traditional vs. digital in instant messaging) depends on the nature of the value of the letter and on the fact it could be replaceable/suppressible or irreplaceable.

Analyses were built according to the respect/disrespect of the different values of letters and to the part of misspellings (see Appendix B). If a misspelling was reproduced in both kinds of media (e.g. if the word “blasé/ée” was written “blazer” in

traditional writing and in DWIM), we only took into account the values of letters that had been respected (e.g. the first base values of the letters “b”, “l” and “a”, the other letters/group of letters “z” and “er” were encoded as “misspellings” both in traditional writing and in DWIM). The whole set of peculiarities justified our methodological choices of comparing two different kinds of media.

All data are presented in order to only indicate the proportion of **conservation** (e.g. 99.79% [0.52] of irreplaceable letters were reproduced in correct writing). This section is divided in two parts (i.e. in general terms and then, in more detailed terms). We chose the SPSS software to provide the following results.

Results According to Replaceable/Suppressible and Irreplaceable Categories

The treatment of data was divided in two categories of value: on the one side, the irreplaceable category, that included:

- Base values without duplication (the three base values of the letter “e” were treated separately);
- Some digraphs and trigraphs without useless duplication (e.g. “ou” and “oin”).

On the other side, the replaceable/suppressible category that included replaceable base values, which are auxiliary values, zero values, position values, some other digraphs and trigraphs that are useless duplications of shorter units (e.g. “ai” and “eau”) and grammatical morphemes.

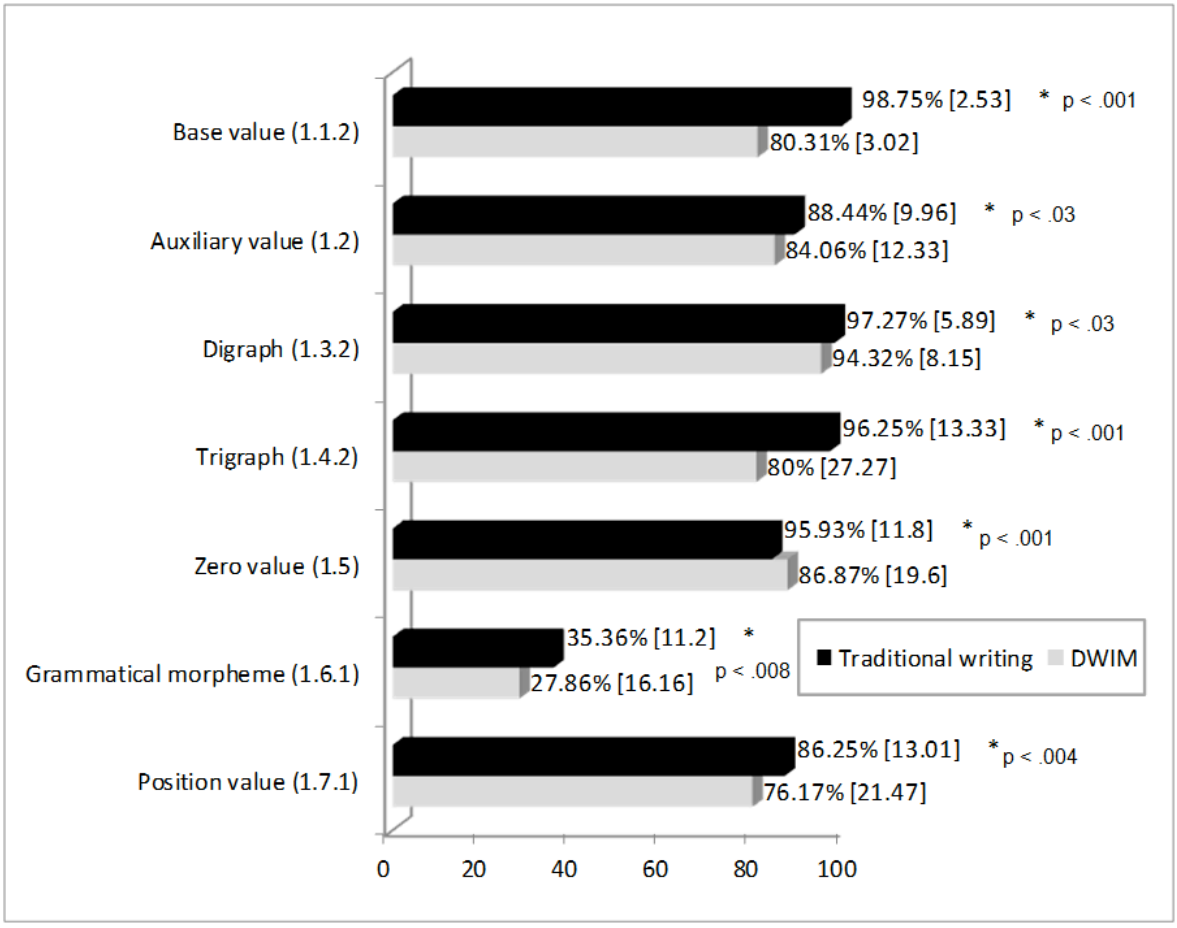
To get such analyses, we built a tool that included every value in Appendix B (Tables B1 and B2). This tool has been submitted to an interrater reliability calculation (with two of the authors) and showed acceptable tolerance (the kappa coefficient was 0.98).

Then, we were able to demonstrate that the letters included in the first category (irreplaceable) were preserved from one medium to the other (i.e. traditional vs. digital in instant messaging), since no significant difference has been found, $t(39) = -0.196$, $p < .847$. Letters included in this category were kept in a very large proportion, since their average values corresponded to 99.79% [0.52] of preservation in traditional writing and 99.83% [0.28] in DWIM.

As regards the second category that included replaceable/suppressible letters, a significant difference was found, $t(39) = 8.749$, $p < .001$. In traditional writing, letters of the second category are produced in large quantities (i.e. 82.11% [6.84] in traditional writing; 69.59% [11.51] in DWIM).

We included neither misspellings nor modifications in our analysis, since the objective of research only aimed at identifying linguistic items related to spelling standards (but

370 we made comments about the proportion of misspellings at the end of the discussion,
371 cf. infra).
372
373 *Results Related to Values of Letters and to the Replaceable/Suppressible Category*
374 We generated two figures that illustrate our results.
375 The first shows that all results corresponding to replaceable/suppressible values
376 (used in traditional writing and in DWIM) were found to be significant. This is the case
377 of letters that have a replaceable base value (1.1.2)[3], t (39) = 29.220, p < .001; an
378 auxiliary value (1.2), t (39) = 2.403, p < .03; of letters included in replaceable digraphs
379 and trigraphs (1.3.2 et 1.4.2), t (39) = 2.314, p < .03 and t (39) = 4.333, p < .001
380 respectively; of replaceable/suppressible letters with a zero value (1.5), t (39) = 4.138,
381 p < .001; of grammatical morphemes (1.6.1), t (39) = 2.822, p < .008; and that have a
382 position value (1.7.1), t (39) = 3.185, p < .004 (see Figure 1 for further details).



383
384 **Figure 1.** Percentage share of replaceable/suppressible values of letters in correct writing and
385 in DWIM
386

[3] These figures relate to our coding (see Appendix B, Table B2).

The second introduces results related to the use of the letter “e” with or without accents. We consider that the processing of such letters had to be analyzed independently of other letters, for all kind of category (i.e. irreplaceable vs. replaceable/suppressible). The letter “e”, with or without accents, is indeed subject to modifications in DWIM, either in terms of accent deletion, or of one letter included in a double consonant for instance (e.g. “int**e**resse” instead of “int**é**resse”, or “e**r**eur” instead of “e**rr**eur” respectively). In both cases, the phonic value of this letter changes. The same applies if the phonic value is not altered (e.g. “av**é”** instead of “av**ai**s”).

As regards specific results of the letter “e” that are also replaceable, the difference between its values in both kind of media (i.e. traditional vs. digital in instant messaging) was found to be statistically significant. This is the case with its base values (1.1.3)[4], t (39) = 8.891, p < .001; with digraphs that are useless duplications of smaller units (1.3.3), t (39) = 2.687, p < .02; with grammatical morphemes, t (39) = 2.403, p < .03; and with its position value, t (39) = 3.204, p < .004.

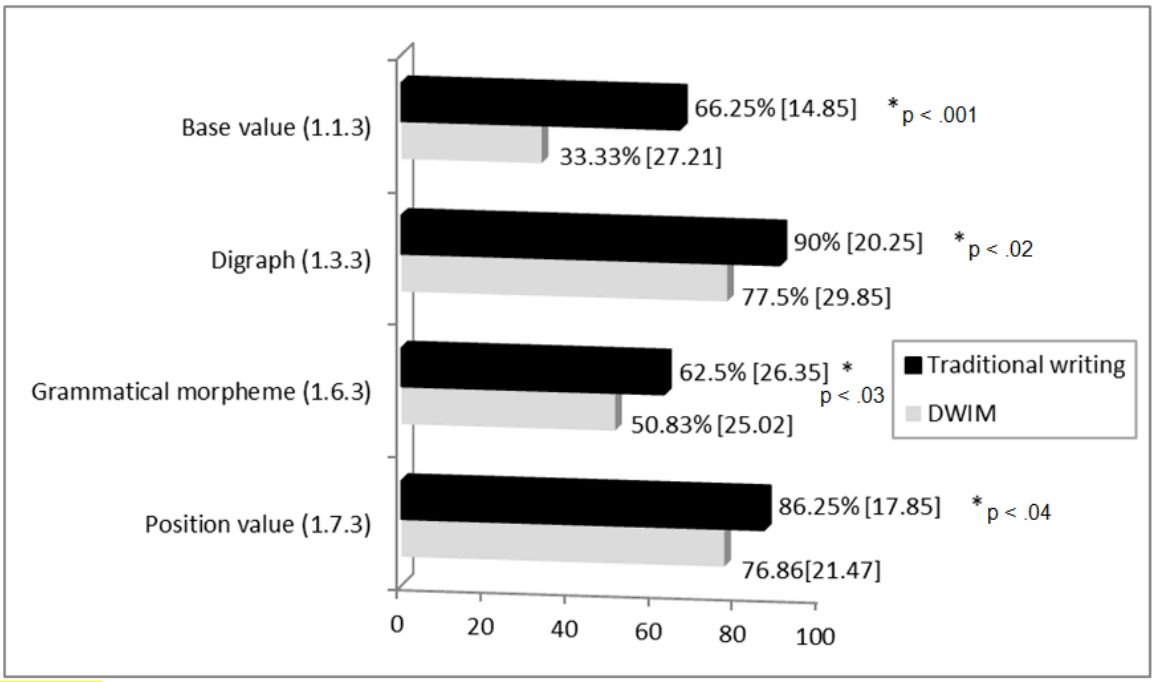


Figure 2. Percentage share of values of the letter “e”, with or without accent in traditional writing and in DWIM

4. Discussion

This study aimed at showing that the user of DWIM does not modify letters randomly, but that s/he relies on her/his implicit orthographic knowledge related to values of

[4] The Figure 3 ends every coding related to the letter ``e'' (see Appendix B, Table B2, for further details).

letters to create modifications. Our hypothesis was based on the fact that some particular kind of letters or groups of letters would be rarely replaced or deleted from one kind of medium to the other (i.e. traditional vs. digital - in instant messaging), whereas others would be more regularly subject to modifications. To get the results, we decided to realize an infrasyllabic analysis. It appears that letters or groups of letters that have a phonic value and are considered as irreplaceable are preserved to a large extent, from one kind of medium to the other (99.79% [0.52] in traditional writing, 99.83% [0.28] in DWIM). Conversely, we noticed a significant difference between replaceable/suppressible letters and groups of letters that have or do not have a phonic value. Students did not use these letters in equal proportions according to the kind of medium, since their production equalled to 82.11% [6.84] in correct writing compared with 69.59% [11.51] in DWIM.

The lower proportion of replaceable/suppressible letters goes to grammatical morphemes, both in correct writing (35.36% [11.2]) and in DWIM (27.86% [16.16]). This value is the most problematic for adolescents for both media. This letters are indeed subject to many changes. In a verb or a common noun, a grammatical morpheme may provide clues, such as the person that is referred to (e.g. in French, the “s” at the end of the verb “di**s”;** in English, the same letter refers to the third person singular, as in the verb “tells”), or the number (e.g. the last “s” of the common noun “bise**s”** in French; “kisses” in English). We noticed that the morphological letter is the same for verbs and common nouns, both in French and in English, whereas it refers to two completely different kinds of grammatical information (i.e. the “s” refers either to a person in the case of “dis” or a plural in the case of “bises”). These multiple options of spelling lead to problems when students have to select the right form in correct writing, but as soon as they produce on instant messaging, this difficulty disappears as teenagers could write however they want.

The fact that adolescents replaced or deleted an important part of grammatical morphemes in DWIM as regard to their traditional production suggests two things. On the one hand, it confirms the existence of the morphemic awareness mentioned by Rey and Carlotti (2008), which is very low since it represents the smallest proportion of letters produced, both in traditional writing and in DWIM. On the other hand, it shows that participants did use their own spelling lexicon (Doneux, 2001) to produce a word correctly spelled in correct writing, and sometimes incorrectly spelled in DWIM (and it applies to the rest of replaceable or suppressible letters also). No matter the kind of medium, students outperformed in spelling in correct writing compared to DWIM. It

444 demonstrates that adolescents rely on their literacy knowledge to notice what could be
445 deleted or replaced in a DWIM production. It proves also that these adolescents indeed
446 made the distinction between the two kinds of media, thus revealing the existence of
447 orthographic knowledge (Plester and Wood, 2009a).
448 Excluding grammatical morphemes, which allow seeing that words are semantically
449 linked (e.g. through plural nominal groups agreement), we acknowledge that results
450 related to base values, zero values, and position values showed that the processing of
451 data in relation to the second category (i.e. preservation, replacement or suppression
452 of letters) refers to an infrasyllabic level (Fayol and Jaffré, 1999). Participants
453 sometimes replaced or deleted letters that had no meaning in the word.
454
455 We did not succeed in establishing the existence of any overall deleterious effect in
456 relation to the use of DWIM and spelling production. If we were able to prove that
457 students outperformed on the spelling level in correct writing than in DWIM, we cannot
458 say if being regularly confronted with the facility of replacing or deleting letters can
459 have an impact on spelling in the long term, especially for words that are frequently
460 used. This study also shows that the quantity of misspellings is more important in the
461 category of relaceable/suppressible letters than in the category of irreplaceable letters
462 in traditional writing (i.e. 17.89% [6.84] of misspellings in the second category; 0.21%
463 [0.52] in the first one). However, knowing which letter could be replaced or deleted in
464 DWIM (and then providing the reasons that would lead to the production of such kind of
465 modifications) would help bad spellers to improve their orthographic abilities. These
466 students would acquire more orthographic knowledge by explaining why their
467 classmate had deleted the letter “s” in the French word “avais” for instance. The
468 expected answer would be “because (a) it is unpronounced, but (b) it indicates we are
469 talking about the second person singular” (thus illustrating what is known to be implicit
470 knowledge). In English, bad spellers would be invited to explain why their classmate
471 have deleted the letter “k” in the word “knowledge” (the expected answer would be (a)
472 the same, and (b) it helps spelling the word “acknowledge” of the same word family”.
473 To conclude, further research should focus on the level of consciousness while
474 adolescents are creating modifications. There would be two options: these
475 modifications would be created consciously (and the process could then be verbalized
476 in the context of concomitant or differed protocols); or would not (and it would then
477 exclusively relate to implicit spelling knowledge). The dual-task paradigm would indeed

help distinguishing what is automatized from what is controlled (cf. Combes, Volckaert-Legrier and Largy, 2012, for further details).

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Appendix

Appendix A

Table A1. French values of letters (Benveniste and Chervel, 1969; Catach[5], 1980; Cellier, 2003).

Name	Definition	Example in French (and if possible, in English)
Base value	Value of letter the most commonly encountered	(fr) [s]: «salut» (en) [l]: «hello»
Auxiliary value	It refers to letters that are unpronounced, but if they are deleted, the phonic value is different	(fr) «contraint» and «contraient»
Digraphs	Combination of two letters, which together form a phoneme that appears to be different form their base value	«e» and «n» ≠ «en» (which is the digraph the most encountered, among others) «a» and «l» ≠ «ai» (which is a useless digraph, since its equivalent is the letter «è»)
Trigraphs	Combination of three letters, which together form a phoneme that appears to be different form their base value	(fr) «poing» (only one trigraph transcribes the phoneme «oin») / (en) «beautiful» («eau») (fr) «château» (useless trigraph, whose phonic equivalent is the letter «o» in French) / (en) «schilling» (useless trigraph, whose phonic equivalent are the letters «sh» in English)

[5] Catach (1980) added logograms, which are monosyllabic words recognizable at first glance (e.g. ``and'', ``no'', etc.).

Zero value	Letter without any phonic value. Its deletion does not lead to a phonic alteration of the word in which it appears	(fr) «Salu**t**» (en) Roc**k**
Morpheme	Letter that provides grammatical information (e.g. gender) or lexical information (e.g. word family)	(fr) désolé**s** doi**g**t (di**g**ital) (en) three cat**s**
Position value	Letter, whose base value is modified according to its environment of appearance (e.g. placed between two vowels)	(fr) [z]: préci**s**e

Table A2. French values of letters (Cellier, 2003b)

Letter	**Base value**	**Position value**	**Auxiliary value**	**Zero value**	**Digraph/ trigraph**
A	L**a**pin [a], l**a**s [ɑ]		América**i**n, g**a**in (if the letter “a” is deleted, the phonic values of the letters “c” and “g” are altered)	P**a**in, lev**a**in, m**a**in	Doubloons of the letter “o »: Ep**au**le, châte**au** [o] L**ai**ne, S**ay**nète [ɛ] Doubloons of digraphs (another digraph or trigraph): B**an**c, **am**bulance, P**aon** [ɑ̃], p**ay**er [ɛj]
B	**B**ase [b]			plom**b**	
C	**C**ase, be**c** [k]	**C**igare [s]	Ex**c**iter	Ban**c**, accro**c**	Doubloon of digraph:

					Cheval [ʃ]
D	**D**ame [d]	In liaison: Gran**d** idiot [t]	Pie**d**, il sie**d**	A**d**dition, bon**d**, renar**d**	
E	3 possible values Mesure [ə], **é**t**é** ou **ê**tre [e], p**è**re [ɛ]	N**e**z, carn**e**t, pi**e**d, st**e**ppe, b**e**lle	Plong**e**on, petit**e**, ils contrai**e**nt	Ami**e**, pi**e**, dénou**e**ment, c**e**inture, s**e**au, pl**e**in	Doubloon of the letter “è”: Bal**ei**ne [ɛ]; “o”: s**eau** [o] Doubloons of digraphs: V**en**t, **Em**pêcher [ɑ̃] App**en**dicite, pl**ein** [ɛ̃] H**eu**r**eu**x, **Œ**sophage [œ] P**oê**le, m**oe**lle [we], Grass**ey**er [ej]
F	**F**ourmi [f]		Ef**f**euiller (second «f»)	A**f**freux, sou**ff**le	
G	**G**ardien [g]	**G**irafe, **g**enou [ʒ]		Doi**g**t, poin**g**	Doublons de digraphs: Vi**gn**e, o**ign**on [ŋ]
H	Ø phoneme, but it helps to make the difference between «Hauteur/		Ba**h**ut, ca**h**ier C**h**ronomètre, g**h**etto	T**h**é, **h**omme	Doublons de digraph: **Ch**aise, **sh**ort [ʃ] Doubloon of the letter «f»: Elé**ph**ant [f]

	Auteur»				
I	Pirate	Camion, pied [j]		Oignon	Poire [wa], pinguoin [wɛ̃] Doubloon of digraphs: Lin, impossible, train, faim, plein [ɛ̃], oignon [ŋ]
J	Jeune [ʒ]				
K	Kilo [k]			Stock	
L	Lune [l]		Pelle	Fils, ville	Doubloonsof the letter «y»: Soleil, mouiller [j], Grasseyer [ej]
M	Mouton [m]		Dilemme	Automne, comme	In front of the letters «b», «p» et «m» Doubloons of digraphs: Lampe, emploi [ɑ̃] impossible, thym, faim, humble [ɛ̃] compote [ɔ̃]
N	Banane [n]	En effet	Antenne	Annexe, chantent	Agneau, pinguoin [wɛ̃] Doubloons of digraphs: Banc, vent [ɑ̃], pin, plein, syncope, brun [ɛ̃],

					b**on** [õ], o**ign**on [ŋ]
O	D**o**s [o], s**o**l [ɔ]	S**o**in [w]	C**œ**ur	Alco**o**l, ta**o**n, **œ**uf	M**ou**le [u], pingu**oin** [wɛ̃] Doubloons of digraphs: p**oi**re [wa], nett**oy**er [waj], b**on**d, t**om**ber [õ], **œ**il [œ], **œ**sophage [e], m**oe**lle, p**oê**le [we]
P	**P**ipe [p]	Tro**p** envie	Step**p**e	A**p**procher, lou**p**	**Ph**oque [f]
Q	Co**q**, co**q**uille [k]			Cin**q** coqs	
R	**R**at [r]		Cloche**r**, pie**r**re	Ba**r**re	
S	Val**s**e [s]	Sai**s**on, grand**s** arbres [z]	Le**s**, sauci**s**se	(the letter «s» indicates plural) Enfant**s**, (or not) souri**s**	Doubloon of digraph: **Sh**ort [ʃ]
T	Ra**t**e [r]	Na**t**ion [s], quan**t** à	Paque**t**, choue**t**te	Den**t**, ils chanten**t**	
U	J**u**s [y]	L**u**i [ɥ], Eq**u**ateur [w], Alb**u**m [ɔ]	G**u**érir	Q**u**i, fatig**u**a	Ch**ou** [u], m**eu**te [ø] Doubloons of the lettre «o»: S**au**ce, châ**teau** [o] Doubloons of digraph: Br**un**, h**um**ble [ɛ̃]

V	**V**ille [v]				
W	2 possible values **W**agon [v], ki**w**i [w]				
X	Ta**x**i [ks]	E**x**amen [gz], di**x** [s], di**x**ième [z]		Chou**x**, chevau**x**	
Y	P**y**jama [i]	Coba**y**e [j]			Doubloons of digraphs: P**ay**er, grass**ey**er [ɛj], nett**oy**er [waj], s**yn**cope, th**ym** [ɛ̃]
Z	**Z**èbre [z]	Quart**z** [s]	Ne**z**, chant**ez**	Ra**z**-de-marée, ri**z**	

Appendix B

Table B1. Values of letters description of target words included in both dictations

Words	**Segmental phonemes**	**Values of letters**	**French IPA transcription**
Qui	qu+i	q = base value u = zero value i = base value	[ki]
Dis	d+is	d = base value i = base value s = grammatical morpheme	[di]

Avais	a+v+ais	a = base value v = base value ai = grammatical morpheme s = grammatical morpheme	[avɛ]
comprise	c+om+p+r+i+s+e	c = base value om = digraph p = base value r = base value i= base value s= position value e = auxiliary value	[kɔ̃pryz]
Merci	m+e+r+c+i	m = base value e = position value r = base value c = position value i = base value	[mɛrsi]
moi	m+oi	m= base value oi= digraph	[mwa]
arrête	a+rr+ê+te	a= base value r= zero value r= base value ê= base value t = base value	[arɛt]

		é= base value	
bahut	b+a+hut	b= base value a= base value h= auxiliary value u= base value t= zero value	[bay]
en effet	en +e+ff+et	en= digraph e= position value f= base value f= auxiliary value et= digraph	[ɑ̃n efe]
intéresse	in+t+é+r+e+sse	in= digraph t= base value é= base value r= base value e= position value s= auxiliary value s= base value e= zero value	[ɛ̃terɛs]
frises	f+r+i+ses	f= base value r= base value i= base value	[friz]

		s= position value e= auxiliary value s = grammatical morpheme	
saoule	s+aou+le	s= base value a= zero value ou= digraph l= base value e= zero value	[sul]
réponds	r+é+p+onds	r= base value é= base value p= base value on= digraph d= zero value s = grammatical morpheme	[repɔ̃]
allez	a+ll+ez	a= base value l= zero value l= base value ez= grammatical morpheme	[ale]
blasé	b+l+a+s+é	b= base value l= base value a= base value s= position value é= base value	[blaze]

les	l+es	l= base value es= digraph	[le]
bon	b+on	b= base value on= digraph	[bɔ̃]
dire	d+i+re	d= base value i= base value r= base value e= zero value	[dir]
sinon	s+i+n+on	s= base value i= base value n= base value on= digraph	[sinɔ̃]
n'importe quoi	n'+im+p+o+r+te qu+oi	n= base value im= digraph p= base value o= base value r= base value t= base value e= auxiliary value q= base value u= zero value oi= digraph	[nɛ̃pɔrt kwa]

erreur	e+rr+eu+r	e= position value r= auxiliary value r= base value eu= digraph r= base value	[erœr]
prénom	p+r+é+n+om	p= base value r= base value é= base value n= base value om= digraph	[prenɔ̃]
loin	l+oin	l= base value oin= trigraph	[lwɛ̃]
juste	j+u+s+te	j= base value u= base value s= base value t= base value e= auxiliary value	[ʒyst]
bises	b+i+ses	b= base value i= base value s= position value e= auxiliary value s= grammatical morpheme	[biz]
pareil	p+a+r+ei+l	p= base value	[parɛj]

		a= base value r= base value eil= trigraph	
beau	b+eau	b = base value eau= trigraph	[bɔ]

Table B2. Coding sheet that has been submitted to an interrater reliability calculation

Coding	**Signification**
1.1.1	Base value of letters that could not be replaced by any other letter or groups of letters (e.g. ”b”)
1.1.2	Base value that could be replaced by any other letter or groups of letters (e.g. an «s» replaced by a «c»)
1.1.3	Equals to one of the three base values of the letter «e» (i.e. «e»; «é» – «ê»; «è» - «ê»)
1.2	Auxiliary value (e.g. «e**ff**et»)
1.3.1	Digraph that could not be replaced by any other letter or groups of letters (e.g. «ou»)
1.3.2	Digraph that could be replaced by any other letter or groups of letters (e.g. «au» par «o»)
1.3.3	Digraph related to the letter «e» (e.g. «ai»)
1.4.1	Trigraph that could not be replaced by any other letter or groups of letters (e.g. «oin»)
1.4.2	Trigraph that could be replaced by any other letter or groups of letters (e.g. «eau»)
1.5	Zero value (e.g. «salu**t**»)
1.6.1	Grammatical morpheme (e.g. «av**ai** +**s**»)
1.6.3	Grammatical morpheme related to the letter «e» (e.g. «désol-**é**»: the second «é» indicates the participle past)
1.7.1	Position value (e.g. «préci**s**e»)
1.7.3	Position value related to the letter «e» (e.g. «m**e**rci»)

Appendix C SPELLING TEST: assessing spelling level (adapted from Doutrieux and Lopez, 1994)

From 6th grade to 12th

Code: **Age:**

	GRAMMAR SPELLING			**USAGE SPELLING**			**Total**
	Part I G.1	**Part II G.2**	**Total G. (G.1+G.2)**	**Part I U.1**	**Part II U.2**	**Total U. (U.1+U.2)**	**Total G.+ Total U.**
Points							
Classe							

DO NOT TURN THIS PAGE BEFORE THE SIGNAL IS GIVEN

You are going to fill in a spelling test.

You do not have to write anything: you only have to tick boxes. WHERE APPROPRIATE, TICK ONE BOX ONLY.

When you will hear the signal, you will be able to go to the next page and to start answering the questions. This test is divided into two parts with a total of 90 questions. Try to answer as many questions as possible. You have 30 minutes.

PART I

Here are sentences in which one word has been replaced by a blank. How would you write this word? We propose you three possible answers. You shall indicate by a cross the ***correct*** answer.

EXAMPLE:

She often use …… different names.

☐too
☐to
☒two

GRAMMAR SPELLING

1. The monument …… the signing of the declaration of independence.

☐comemmorates
☐commemorates
☐comemorates

2. When I …… on my left knee the other day I got a sharp pain.

☐knelled
☐knelt
☐kneled

3. He …… twenty dollars for the shirt.

☐paid
☐payed
☐peyed

4. Sales of automobiles…… last year.

☐increesed
☐increased
☐incriesed

5. He …… me to books on astronomy.

☐referred
☐reffered

☐refered

6. Please telephone him …… ☐immediatly

☐immediately

☐immediatelly

7. Jessica is such a ……, she goes shopping once a week

☐closehorse

☐clothehorse

☐clotheshorse

8. I …… a button on my shirt. ☐sewd

☐sewed

☐sued

9. In particular, banks should present …… actual services on offer.

☐there

☐their

☐they’re

10. We have to open ourselves up to the ……, and have a public debate!

☐unforseen

☐unforeseen

☐unfourseen

11. The right to a fair trial includes the right to an …… and impartial tribunal. ☐independent

☐indepandent

☐independant

12. Glass and metal can be …… and sold to various industrial recyclers.

☐seperaited

☐separated

☐seperated

13. Three things ……. over the last week that should change everything.

☐happend

☐happened

☐hapened

14. Any group of individuals may gather and demonstrate ……. and peacefully.

☐publicly

☐publically

☐publicaly

15. The colors of this ……. vary in the intensity of contrast between light and dark markings.

☐incheswarm

☐inchwarm

☐inchworm

16. I can truly say that no one left the place …….

☐disapointed

☐disappointed

☐dissapointed

17. ……. we do not know more precisely, where the project should take place.

☐unfortunatelly

☐unfortunatly

☐unfortunately

18. It is ……. essential that measures are in place to penalize hate speech and hate crime.

☐therefore

☐therefor

☐theirfor

19. You have …… your destination.
☐reeched
☐riched
☐reached

20. An error has …… in the ignition system.
☐occured
☐occurred
☐ocurred

21. We had to pursue our …… strategy.
☐buisness
☐busyness
☐business

22. Bring a water bottle with you …… you go.
☐wherever
☐whereever
☐werever

23. It is best to keep calm and to counter with …… answers.
☐quick-witted
☐quick-weated
☐quick-wited

Total G.1

USAGE SPELLING

24. People return to their villages to …… seeds for the next harvest.
☐ sew
☐ so

☐ sow

25. This …… was the answer we expected.
☐ truely
☐ truly
☐ trully

26. There are few safeguards that can help …… this goal.
☐ acheive
☐ achieve
☐ acheve

27. I …… over the area and admire the beautiful landscape.
☐flew
☐flue
☐flu

28. It would have been very difficult to …… any more families.
☐accommodate
☐acomodate
☐accomodate

29. Cover and …… in oven for two hours.
☐braise
☐ brays
☐ braze

30. A major …… faced by scientists is how to use new technologies in a manner that is respectful to participants.
☐ dilemna
☐ dilema
☐ dilemma

31. We will call your friends and …… immediately.
☐ colleagues
☐ collegues

☐ colliegues

32. I am convinced that these concerns will be welcomed at …….

☐ commitee
☐ comittee
☐ committee

33. Following the destructive ……. on Asian coasts, the World Food Programme has issued an emergency appeal.

☐ tidal waive
☐ tidall wave
☐ tidal wave

34. It is a real ……. of passage from tradition to modernity.

☐ rite
☐ wright
☐ right

35. This unit can show the temperature both in degrees …… or Celsius.

☐ Farenheit
☐ Fahrenheit
☐ Fahreneit

36. It was a ……. scenario.

☐ bizarre
☐ bizzare
☐ bizare

37. This bouquet is made entirely from red …….

☐ chrisanthemums
☐ chrysantemums
☐ chrysanthemums

38. I think there is something to both arguments, but neither is ……. convincing.

☐ holey
☐ wholly

☐ holly

39. It is the …… of reality.
☐ begining
☐ beginning
☐ beguining

40. You must work with gloves and …… a mask.
☐ ware
☐ where
☐ wear

41. The Italian people eat a lot of grilled ……
☐artichocke
☐artichauke
☐artichoke

42. I was very impressed with his …… of forest ecosystems.
☐knowlege
☐knowledge
☐knowllege

43. You want to move to a …… country.
☐foriegn
☐foreign
☐forein

44. I am sorry to ……, but his time is up.
☐interupt
☐interrupt
☐interupped

45. I was …… to hear from you.
☐suprised
☐surprised
☐surpised

Total G.1

PART II

Every following question is composed of three sentences. In every sentence, a word is underlined. In two sentences, the underlined word is correctly spelled; in one of the three sentences, the underlined word is incorrectly spelled. You will tick the box that corresponds to the ***wrong*** answer.

BE CAREFULL: in this part of the test, you have to find the word that is INCORRECTLY SPELLED.

EXAMPLE:

☒This product contains amoniac.

☐The accumulated surplus is more than enough.

☐Accredited press representatives will have full access to all sessions.

GRAMMAR SPELLING

46. ☐ Anyone can relate to that TV series.

☐ Bacteria multiply rapidly.

☒ Gambling involves betting on card games, dominos, horses or other sports.

47. ☒ I will finish within two hours without a fail.

☐ He is without a doubt the best waiter we have ever had.

☐ I did the crossword puzzle without a dictionary.

48. ☐ Calves stay close to their mother.

☐ Infants can ingest dust by putting their fingers into their mouths.

☒ The medias are everywhere.

49. ☐ The four measures are not equivalent.

☒ She adopted a nonchalent attitude.

☐ The sedative makes people extremely somnolent.

50. ☒ The temperature cannot be hoter for the recipe.

☐ There is nothing sadder than not knowing what to do in life.

☐ We do not think we could have said it any plainer than that.

51. ☒ Drop off your item in any street lettersbox.

☐ Some would say frugal, but in reality I can be a real cheapskate.

☐ The residents enjoyed the fireworks.

52. ☐ Some toothpastes are not recommended for children under the age of six.

☐ Do not take this medicine with grapesfruit juice.

☐ Enter the total number of mailboxes that the customer can host on the server.

53. ☐ It will be cursed by the generation to come.

☒ Cattle are breded for milk and meat.

☐ Roll balls in crushed cereal mixture.

54. ☐ This can definitively push someone off the straight and narrow for good.

☒ Anyone of us can put them into action!

☐ No one wanted to hear them.

55. ☐ For nearly 15.000 years, Dog and Cat have seemed to enjoy living with Human.

☒ They agreed with the mayor and his wife who has seen their grown children move away.

☐ When everyone has had a chance to speak, we were able to really start something.

56. ☒ Use these datas for your calculations.

☐ Bad luck for thieves when they happen to be standing in front of a video intercom system with video memory.

☐ Money is a means to an end.

57. ☐ At no time should the information supersede the recommendations of your physician.

☐ Consent of prospective participants shall precede collection of, or access to, data.

☒ Respect traffic lights and do not excede the speed limit.

58. ☐ That is a principle that I thought the government believed in.

☐ Observe the sonar signal to see if there is a noticeable increase in sensitivity.

☒ I am greatful to all those who supported us.

59. ☐ This reduces the risk of you being accidentally falling.

☐ Sometimes, excessively generous solutions create more problems than they are intended to resolve.

☒ It is completed hierarchicly, in two steps.

60. ☒ The collection of the American cite is particularly abundant.

☐ I do not want to lose sight of the fact that it allowed us to work properly.

☐ They cite the example of the general strikes that have occurred since 1998.

61. ☒ These hypothesis must therefore be assumed.

☐ There is one species of humans

☐ Some of these diseases have treatments relatively expensive.

62. ☐ A legal opinion is being sought on this matter.

☐ This is an issue that he has fought hard for.

☒ Make sure that the cable is not extremely taught.

63. ☐ We will eagerly invite others to join us in this mission.

☒ He was fairly franticly looking for a legal opinion about intervention.

☐ He hoped to develop a hunting dog that would work obediently.

64. ☐ In March the sheep must be sheared.

☒ Two passengers clang to rocks, while four others were carried by the current.

☐ Last night, I dreamt I was a cat.

65. ☐ People are encouraged to speak up.

☐ Most people who work a day job have the same issue.

☒ If more than one person are required, the cost may be at the member's expense.

66. ☒ Lucie and Paul are embarassed that they changed their point of view.

☐ People who speak very quickly are sometimes perceived as panicky.

☐ We currently focus on three main areas.

67. ☐ A number of neologisms have sprung up over the last two years.

☐ Generally more men than women reported to have drunken alcohol during the past 6 months.

☒ We have woke up to our responsibility.

Total G.2

USAGE SPELLING

68. ☒ He also employs paid help to clean his appartment.

☐ Her appointment expires when a successor is appointed.

☐ The value of public services presented here is a first approximation.

69. ☐ He was riding his tricycle and fell off.
☐ I would encourage her to avoid that kind of hyperbole in the future.
☒ They are born into a mysoginous culture.

70. ☐ We believe in the dreams of great leaders who defiantly changed the world.
☐ We solemnly declare that this information has been provided to the best of our knowledge.
☒ While technicly feasible, the second option was discarded.

71. ☒ Complete, sign and mail it in the postage prepaid enveloppe provided.
☐ A second analysis in attempt to precise this outcome will be published.
☐ I do like concurrence.

72. ☐ We reached a peak in 1998 in terms of industrial production.
☒ We can get a sneak peak of what to expect over at their calendar.
☐ It has been necessary to retain the peak flood of torrents.

73. ☒ It was fantastic to realize, while I was sobing, that Andrea had saved my life.
☐ Despite the gravity of the act of sabotage against public property, no lawsuit was brought against the officer.
☐ Most patients only have a 30 % chance of a sibling match.

74. ☒ Their pettition is admissible.
☐ They believe that it would be very fitting.
☐ Citizens must have access to affordable public services.

75. ☐ The country also has 220 species of mammals.
☐ Confronting poverty is not optional.
☒ Air conditionning is the process of altering the properties of air.

76. ☐ Nothing can be more existential than the experience of children.
☒ Someone buying an expensive car saves a substential amount.

☐ The differential of pressure can be very weak.

77. ☐ The big oyster shows the pearl which will be used.

☐ Place the plum tomatoes in a processor and blend to a purée.

☒ We combined paraffin whacks with different pigments to create inexpensive art supplies.

78. ☐ A link is sent permitting the subscriber to open the entire article in the browser.

☐ Ask the children to clap each time they hear an accented syllable.

☒ Our aid is scatered.

79. ☐ The operation was expanded to include a gristmill.

☒ Pour soup and garnish with chervill.

☐ We do not have a permanent ban on the krill fishery in France.

80. ☐ You can choose to update or delete them at your convenience.

☐ People needed them to strike a balance between family life and working life.

☒ We will be distributing an updated calandar to the members.

81. ☒ You must find a spot indoors that receives direct sunlight, such as a windowsile.

☐ The table shows the lowest decile of earnings: 10% of workers earn much than this.

☐ Sending all children with febrile respiratory illnesses for testing will overwhelm the capacities of the diagnostic laboratories.

82. ☐ They disengage from the political process.

☒ The pilots accepted ten passengers and 670 pounds of bagage for the return flight.

☐ The other fruit grown in Ile-de-France are strawberries and greengages.

83. ☐ They are not familiar with new business practices.

☒ Transport of animals by rail is tending to disapear.

☐ They will need to make arrangements with the cemetery.

84. ☐ There have been some difficulties, but we should not exaggerate them.

☐ It is an excellent technique to move people to more creative thinking.

☒ A ceilling should be set for the level of compensation.

85. ☒ For rocks will be sufficient to hold the canvass.

☐ There was a flurry of activity.

☐ This is the perfect marriage of fruit.

86. ☒ We know it is difficult to borrow money from a creditor without a personal guarentee.

☐ In the absence of progress on this issue, the council will maintain its measures.

☐ It has been my experience that if we do not have a map we should not start our trip.

87. ☐ This has nothing to do with the instrument.

☐ Did you have an argument?

☒ The annual accrument rate is 7.6%.

88. ☐ There is no clue in the report itself.

☒ An aurae would be an electromagnetic field.

☐ Blueberry is an important food source for a wide range of wildlife.

89. ☐ One has to be very careful when using it.

☒ Abstentions and nul votes do not count.

☐ They will always remain faithful to their principles.

90. ☒ I began to loath the training schedules.

☐ What sets us apart as humans is this freedom to choose.

☐ Now we have clean air to breathe.

Appendix D. The two dictations

In traditional writing (dictation 1)

Target words are written in bold letters:

Cette œuvre théâtrale rapporte l'histoire de la famille d'Agamemnon, roi des rois de l'époque de la guerre de Troie. Après plusieurs assassinats qui frappent la famille, la fille d'Agamemnon se voit contrainte d'épouser un simple jardinier.

«Ce qu'il est **beau**, le jardinier ! Je me voie **blasée**.

- **En effet**, tu le **dis**. C'est le jour de son mariage.
- Le voilà […] votre palais d'Agamemnon! Cela m'**intéresse**!
- On croit le voir, mais c'est un mirage. C'est comme le jardinier **qui** vient là, devant **moi**, qui veut vous parler depuis son **bahut**. […]
- Tu ne nous **avais** pas défendues, tu te **frises** de n'avoir pu le faire.
- Le destin te montre son derrière, jardinier. Regarde comme je t'ai **comprise**. […]
- Ecoute ma sœur! Tu as **arrêté** cette **erreur**?
- Vous connaissez ces filles ? C'est **n'importe quoi**. **Sinon**, il serait **bon** de dire votre **prénom**.
- J'ai les ai rencontrées aux portes. Elles me semblaient si sympathiques.
- Nous l'avons suivi et pourtant, il nous **saoule**.
- **Les bises** lui sortent tout **juste** de la barbe. […]
- **Merci** d'être polies, enfants, et dites-nous plus **loin** ce que vous **allez** faire dans la vie.
- **Réponds** la première. Fais-tu **pareil** que ta sœur?»

Adaptation of the work of Giraudoux (1937).

In DWIM (dictation 2)

Interlocuteur 1: Hey

Envoyé vendredi à 15:29

Interlocuteur 2: salu

c Thibau c ca

Envoyé vendredi à 15:32

Interlocuteur 1: ☺

Interlocuteur 2: bon la c **ki** stp **di**

Interlocuteur 1: Thibau!

Interlocuteur 2: aaaahh ok jt**avé** pa **compriz**

Interlocuteur 1: ^^

Interlocuteur 2: oué merci

Interlocuteur 1 : Tu parle avc **moi**

Interlocuteur 2 : mé ché pa de koi tu ve ke je parle avec toi, du **bahut** ?

Interlocuteur 1 : Auccune idée ^^

Interlocuteur 2 : de loulou

Interlocuteur 1 : amdr'

Si tu veu ;D

Interlocuteur 2 : il **bo**

Interlocuteur 1 : Non! jui pas ...

Interlocuteur 2 : ben si **en effet** mdr

Interlocuteur 1 : Elle aime qui carla?!

Interlocuteur 2 : ah ah pk ca t'**intéresse**

Interlocuteur 1 **:** non et pk elle me **saoul** avc lana?!!

Répond vite!

^^

Interlocuteur 2 : pk tu flache sur l tu te **frise** ! c bon tou le monde le c et puis vou **allé** bien ensemble lol

Interlocuteur 1 : Non fait ps ca moi j'ai arreter de tembêter^^! Jsui **blasé**

Interlocuteur 2 : oué oué c ca ta **arrété** depuis koi 5 scd ☹ **les** boules

Envoyé vendredi à 15:43

Interlocuteur 1 : non stp saoul pas je te jure que je l'aime pas!

Interlocuteur 2 : mé c **bon** tu pe le **dire** lol

Envoyé vendredi à 15:45

Interlocuteur 2 : ya intéé ke tu lol car **sinon** …

on parle de **n'import koi**

Envoyé vendredi à 15:49

Interlocuteur 1 : Bien envoyé Thatiana dslsi ya une **éreur** ds ton **prenom**

Interlocuteur 2 : on parle de koi

Interlocuteur 1 : Je c'est pô!

Tu abite ou?

Interlocuteur 2 : a lafoy é twa a molin nn, ca fait **loin**!

Interlocuteur 1 : Oep

Tu es simpa toi ... ☺

Interlocuteur 2 : a bon

Interlocuteur 1 : ?!

Interlocuteur 2 : ben tu meme bien

Interlocuteur 1 : Mais **juste** bien ...

@+ **bise**

Interlocuteur 2 : BEN OUI **MERCI** MOI C **PAREIL** :D