Decoding Note-Taking Abbreviations and Symbols Using a Mobile Device

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This research indicates that students who take notes increase their retention levels and make better grades on tests. This research also indicates that students using abbreviations and symbols, as an alphabetic shorthand system, take notes more quickly and more efficiently. It examines note taking research, a brief history of shorthand, Apple's dedicated decoder, and reports on an action research project whose purpose was to develop a comprehensive alphabetic and symbolic decoder. The decoder has a copyright, trademark, and a patent pending designation.

Keywords: note-taking, texting, mobile device, Apple, The Ruby Translator

Introduction

Want to increase your students' classroom performance? This research strongly indicates students who take notes increase their retention levels (Rutgers Preparatory School, 2011).

...the result of taking notes is much more than the production of a passive "external" information store, as the note taking action itself is part of the memorization process and results in the creation of a form of "internal" storage. (Boch & Piolat, 2005, p. 104)

To take accurate classroom notes students need a note-taking system that allows them to take their notes as fast and accurate as a teacher speaks. "The average writing speed of a student is around 0.3 to 0.4 words per second, whereas a teacher speaks at a rate of around 2 to 3 words per second" (Boch & Piolat, 2005, p. 102).

A Brief History of Shorthand

To take classroom notes in a fast, accurate, and convenient manner, using their tablet or smart phone platform, a shorthand system is required.

Shorthand is a method of writing rapidly by substituting characters, abbreviations, or symbols for letters, sounds, words, or phrases. The process of writing in shorthand is called stenography, and has also been called "brachygraphy" and "tachygraphy" (Retrieved from <http://www.merriam-webster.com>, 2011).

Business educators once taught hand written symbol shorthand systems like Gregg, Pitman, and Century 21 Shorthand. They also taught hand written alphabetic shorthand systems like easy script speed writing, speedwriting, and Superwrite. These were all good hand written systems but in 2012 students began doing everything on a computer or a smart handheld device platform which is often referred to as a multiple learning device. It appears that even our state departments of education recognize that cursive writing, handwriting, is

not as important as it has been for 100's of years. So much so that 46 states have adopted the Common Core State Standards for English, a new set of standards students are expected to learn before graduation, which does not include cursive writing (State of Arkansas, 2009; Gruber, 2011).

The major purpose for the teaching of hand written shorthand systems was to prepare students, primarily female students, for an occupation that carried the title of secretary and was also useful for journalists. These hand written shorthand systems were not taught to the entire student population, as a note-taking learning tool. For the purpose of taking classroom notes to improve classroom performance “very few students are taught even basic ‘note taking’ skills. This despite the fact that students are expected to take extensive notes during their courses across the curriculum, and despite the recognized usefulness of note taking for storing, learning and thinking about what is being taught” (Boch & Piolat, 2005).

Texting

Think a student in your class has texted? “At schools where cell phones are forbidden, 58 percent of students with mobile phones say they’ve sent a text message during class” (Ludden, 2010).

Today’s youth think of texting as their way to communicate. How much do teens text? According to the Pew Internet and American Life Project 75% of 12–17 year olds own cell phones and of those 88% text. One in three teens sends over 3,000 text messages a month (or over 100 a day) while 15% send over 200 a day. Even though most teens are not allowed to have their cell phones on in class, 64% admit to having texted during class; and 25% have actually received a call during class (Lenhart, 2010).

The first electronic shorthand system was Morse code. But Morse code, much like secretarial shorthand systems, was not used by the masses. Texting is the first electronic shorthand system by and for the masses thanks to availability of electronic communication technology—smart phone, tablet, etc.. We call texting “speaking the language”—speaking the language of today’s students.

Texting (translating from text to full words) on a mobile device is a new idea. Apple on October 12, 2011, reinvented its operating system by announcing the release of iOS 5. With the release of iOS 5 Apple is changing the way users relate to the online world (Potter, 2011). One of the 200 new features is keyboard shortcuts (Goetz, 2011). Keyboard shortcuts allows iOS 5 users the functionality of taking abbreviations (text) and expanding them into full words. Apple’s system is very basic requiring eight steps and is limited to only three functions—save, edit, and delete (*How to create text shortcuts in iOS 5*, 2011). To add an additional text abbreviation and full word a four step process is required for each additional text entry.

There are limitations to Apple’s keyboard shortcuts system. Only one full word meaning can be entered per shortcut (text). The shortcut cannot contain spaces as in Figure 1. For all of our many friends who use their native foreign languages when texting, in the global village, this severely limits the functionality of Apple’s Keyboard Shortcuts system.

When dealing with global village texting there are usages that must be accounted for. These usages are hard spaces, capital letters (case sensitive) and multiple meanings for one text. There are others but for this article these usages for French, Italian and Spanish text are illustrated in Figure 1.

Hard spaces are part of each global village text in Table 1, the first letter of the second and third French text begin with a capital letter and in the third illustration the third component of the text C pa Spa is also a capital letter. The fourth French text illustrates a multiple English Translation. The third Italian text, t tel + t rd, contains multiple hard spaces. Apple does not accommodate any of these common usages.

Figure 1. Apple shortcut.

Table 1

Global Village Texting Abbreviations

Global village texting abbreviations Hard spaces, capital letters, and multiple translation					
French text	English translation	Italian text	English translation	Spanish text	English translation
2 ri 1	you're welcome	c sent	we feel	d nxe	at night
C cho	it's hot	dv 6	where are you	k hcs?	What are you doing?
C pa Spa	that's not nice	t tel + trd	I'll call you later	q tal?	How are things?
y a	there is or there are	+ - x	more or less	t q	I love you

Plester, Wood, and Joshi (2009) studied 88 British 10–12 year old school children to determine the relationship between their knowledge of text messaging and school literacy outcomes. The students translated a text message into standard English then translated standard English into a text message. The frequency in which texting was used had no effect on the proportion of texting abbreviations used by the children. Fifty-eight percent of the children used texting abbreviations in their messages. The children who had the highest percentage of usage of texting abbreviations were found to have the highest verbal reasoning scores. In a second study of 10–11 year olds, it was found that knowledge of texting abbreviations was positively associated with spelling attainment. The conclusions drawn were that pre-teen children's texting ability is not damaging to their standard English ability and that there was a strong positive relationship between their use of texting abbreviations and other measures of their English ability. In agreement with Plester et al. (2009), Feldman (2011) reported that texting teaches positive language skills and stretches those skills as well. Generally speaking, texting when compared to other alphabetic shorthand systems is easily recognized as a true alphabetic shorthand system and thus in shorthand terms is not a new concept!

Note-Taking

The definitive book for studying and the importance of note-taking is *How to Study in College* by Walter Pauk and Ross J. W. Owens (10th Edition). The authors express the importance of using a shorthand system and abbreviations and symbols on the following pages. On page 118, the authors mention shorthand as a “way to efficiently express complicated ideas”. Page 264 provides the student with “examples of technical symbols” and “typical technical abbreviations” to be used when taking notes. The authors further state “One simple way to limit the length... is by abbreviating common words. For example, use w/ instead of with...”

Dr. Pauk is also the developer of the most widely recognized and used note-taking system in the world—Cornell note-taking system. Additionally, Stanford University (2013) refers to texting abbreviations as “note taking shorthand”.

Ruby Translator

We have identified an easy to use alphabetic shorthand system called texting that most if not all students truly enjoy. But what system allows us to bring this necessary note taking communications technology to our students? A device similar to the new Dick Tracy watch and will accomplish more than what the court reporter’s machine does for court reporters (Eaton, 2010; Engber, 2005; Retrieved from <http://pcmag.com>, 2011)? And more than Apple’s iOS 5 keyboard shortcuts? The authors of this article conducted a five year action research project that culminated in an app called “The Ruby Translator” and affectionately referred to as RUBY. RUBY was accepted by the iTunes store on August 23, 2011. The RUBY app allows texting to be used as an electronic alphabetic shorthand system. RUBY translates on-the-fly, translates abbreviations and symbols into words, sentences, paragraphs, or whatever the user defines the abbreviations and symbols to represent. This can be done in any language and saved to the user’s word processor and can communicate its output by email, Facebook, Twitter, or SMS to anyone any place in the world.

Because we live in a global village, RUBY can appear operational in nine of the top ten spoken languages plus French and Italian by a single tap. The following pages are going to provide a glimpse into the product of our action research—RUBY’s functionality. Space does not allow for the explanation of all of The Ruby Translator’s functionality (For an independent reviewer’s review video of RUBY, go to <http://www.AppShrink.com>).

At this point of this major research project, The Ruby Translator is a copyrighted, trademarked and patent pending texting communications app, available on both iPhone and iPad platforms and soon to be available on the Droid platforms. This app has the potential to revolutionize classroom note-taking using texting.

The Ruby Translator©™ (patent pending) is a unique innovative texting communications tool. The United States government determined its uniqueness by issuing a copyright and a patent pending number and trademark. The Ruby translator is, “designed to make text communication a breeze. (It) does not matter if you’re a seasoned texting professional or just a new recruit in the text world”, for all individuals (teachers, parents, administrators, counselors, and students), to improve and expand their texting communications capabilities, by speaking the language of today, in the most efficient electronic process possible (Retrieved from <http://www.appshrink.com>, 2011). RUBY is an App that allows users to translate text shorthand into standard English or standard English into text shorthand on-the-fly. Using the TXT to WORD option allows the user to enter texting shorthand as input. RUBY then searches its database of dictionaries and automatically displays options for the user to select in Standard English. Standard English can also be translated into texting

shorthand using the WORD to TXT option. The output can then be sent by email, Facebook, Twitter, or SMS from a mobile platform to its recipient or saved to Pages, Quick Office, or WORD Mobile or other WORD processors of the Ruby translator. RUBY maintains a character count, to the right of TXT Input, for any communications service that requires the user to have knowledge of this information. For convenience simply tap date and the character countries displayed (as shown in Figures 2 and 3).

Figure 2. Platforms.

Figure 3. Translation options.

To integrate texting as a universal form of communications, several key features are required that have not been available until RUBY. To communicate accurately, the receiver must understand the sender's text. Until this point, translating on-the-fly has not been available—not everyone understands the alphabetic shorthand system known as texting. How can a non-texting generation communicate with the younger texting generation when the older generation does not know their language? To ensure that both sender and receiver are able to communicate using text shorthand, there needs to be encoding and decoding (translation). Until now, only one word (encoding) to one meaning (decoding) has been available. RUBY decodes “on-the-fly”—meaning as you enter data RUBY decodes continually displaying output. In some cases, there are multiple decodes. When there are multiple decodes you can accept any one of the decoded words or not—your choice. There may be as many as 100 or more choices. Decoding “on-the-fly” is available for the first time—one of the many important features of this app. Communications, dictionary, editing, and printing are some of the major features. All of these texting translations features are unique and available for the first time to help students take classroom

notes and increase their retention level (see Figure 4).

Figure 4. TXT to WORD translation.

Figure 5 are illustrations of RUBY translating the TXT +. In this illustration, the user is using TXT to WORD translation. TXT to WORD and WORD to TXT modes may be selected in the options menu. TXT to WORD translation is used when a person inputs a TXT, an abbreviation (alphabetic shorthand symbol), and the output is in full word(s). The TXT + has been entered. The translation for + is shown on the two TXT Input screens, along with the total number of options—6 WORDS in the second picture, with the translation, plus, displayed in picture three. Note that the TXT + is also shown in the WORD output screen above the TXT input screen. It is possible for a TXT to have as many as 80 or 90 WORD options—There is no maximum to the number of meanings that can be displayed in the drop down box.

Figure 5. WORD to TXT translation.

Let us reverse the process and type the WORD plus to translate into a TXT. By selecting WORD to TXT, you will notice that TXT Input has switched to WORD input in the image on the left. This is to let you know which of the two translation modes you are inputting. Plus has been keyed, and to the left, plus displays one TXT's option – +. This means that there is one alphabetic shorthand symbol for plus.

Figure 6. Communications.

Communicating with one’s self requires the ability to transfer output data from RUBY into a text editor (word processor) to perform any necessary text editing functions or to save in file format for later retrieval. Your universal texting communications system must also provide several modes of sending a text message—email, Facebook, SMS, Twitter, etc.. Figure 6 is the RUBY communications page illustrating its ability to perform many of today’s communications functions.

One of the major strengths of the Ruby translator lies in its add-on dictionaries which make up its database. The texting language is not limited to English. RUBY can TXT in French, Italian, German, Spanish, or any language or subject as long as RUBY has that specific language dictionary. RUBY is designed to be used by the global village. Ruby’s buttons can be set in English, Arabic, Chinese-simplified, Chinese-traditional, French, German, Hindi, Italian, Japanese and Spanish (as illustrated in Figure 7). It is truly multi-lingual. As Appshrink.com (2011) said, Ruby “comes with a truly frightening number of languages”.

Figure 7. RUBY displayed in different languages.

CAMBIAR TECLADOS

- La opción de teclado Añadir debe ser completado antes de completar los pasos de cambio de teclado.
- Toque en el área de entrada de Ruby. Se mostrará el teclado

Figure 8. Changing keyboard to Spanish.

Figure 9. Available dictionaries.

Figure 8 is RUBY in Spanish explaining how to change the keyboard to Spanish. Two of the leading texting translation Websites have partnered with RUBY so dictionaries are provided by Netlingo© and My Textalk©. The authors have developed an English texting dictionary that is for single word texting as opposed to the texting phrases that are common. The English texting dictionary is the most functional for note-taking and contains over 90% of the most commonly spoken English words. In addition, a dictionary of common drug

and alcohol terms is available. This dictionary was developed to provide assistance in monitoring and/or knowing addiction terms by concerned parents, loved ones, educational personnel, drug counselors, law enforcement agencies, medical field personnel, and all other interested and concerned parties. Teachers can also build their individual class dictionaries, and then distribute their personal dictionaries to all of their students by email or through iTunes. One can even have class assignments where the students either help or build a class dictionary. The structure of the personal dictionary is as limitless as one's imagination. Of course, the simplest dictionary is one consisting of the vocabulary words for a class.

The edit/view pages of the English Text 4+, My Textalk 17+, and Netlingo Smileys 17+ dictionaries are shown in Figure 9. At the bottom of the English Text 4+, screen note that there are 2,243 TXTs. This means that there are 2,243 text symbols in the left hand column. To the right of each text symbol is the meaning of that text symbol. To the bottom left are the Edit button and the Add button. The Edit button allows one to edit a text symbol and/or its meaning. The add button allows one to add an entry to the dictionary as a text and text meaning. At the top of the page one can search the dictionary by TXT (top left side) or search by WORD (top right side). One can even turn a text and its meaning off if one wishes not to use that text and its meaning. When using a foreign language you can use the case sensitive button. This allows for a text and its meaning to be entered in one context in lower case and a second context in upper case.

The functionality of Ruby is consistent throughout all platforms. Space is limited thus some of the functionality of Ruby was not included in this article. Our purpose was to whet your appetite with the future today by showing a tool that has the capability of motivating your students using their language and at the same time helping your students be more successful in the classroom.

The future of using texting, an alphabetic shorthand system, for note taking is NOW! Are you excited and ready to embrace this new technology to help your students increase their retention levels and grades—We hope so!

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