WHAT'S IN A NAME: The Amateur's View of Good Practices in Naming an Online Educational Program

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ABSTRACT

Branding is considered to be particularly important in the marketing of online educational programs. A critical step to establishing the brand is naming the product appropriately. To this end, one can secure the services of professionals or rely on a do-it-yourself approach. The research reported here aimed to identify the features that non-professionals (graduate students) consider to be important in the name for an online educational product, and to compare these to the recommendations made by naming professionals (as reported in the literature). A survey directed at current and prospective graduate students at a traditional university asked about the desirability of 16 characteristics in the name of a new line of online courses. The six characteristics that were deemed most critical are (in order of importance): self-explanatory, memorable, easy to pronounce, has appealing associations, suggests/hints at the key features, and short. These are the same features that professionals in the business of creating new product names generally consider as best practices in creating a name. The results show that contrary to the concerns expressed by some practitioners in the naming industry, college-educated individuals who do not create names for a living nonetheless demonstrate an awareness and appreciation for the features of a good name in an Internet-based course delivery system.

Keywords: **Naming, online, features, non-professionals, self-explanatory, memorable**

INTRODUCTION

Like all sectors of the economy, colleges need to engage in branding (Chapleo, 2011). Branding may be particularly important in the marketing of online educational programs (Simpson, 2011), especially if a traditional university decides to create a separate identity for its distance education program in order to allow it to stand on its own merits and not potentially dilute the university's image if it fails to perform (Paden, & Stell, 2006).

According to Gokaliler and Sabuncuoglu Aybar (2011), an online education program needs to have a strong name, logo, and symbol in order to compete effectively.

Naming a new product or service is recognized as a critical step in establishing the brand (Turley & Moore, 1995).

A number of companies specialize in naming new products and services, which can be quite lucrative, as evidenced by the title of a US News & World Report article providing an overview of this industry: "*What's in a name? For the pros, big bucks*." (Hammel, 1997).

The claim is made by the professionals that their guidance in naming is absolutely necessary, and amateurs are warned about the potential dangers fraught in creating good names (e.g. Aper, 2008; brighternaming. com; Dunford, 2009).

Although some writers refer to the practice of naming as a science (Thompson, 2011), an inspection of actual practices reveals that most frequently the process is mainly art (Hammel, 1997; Russell, 2007). A number of conventions (rules of thumb) for crafting good names have been proposed, but quite often these are anecdotal, without a theoretical foundation or even any empirical evidence to support them (Klink, 2009).

Some authorities therefore advocate a "homegrown" approach, pointing out that many of the top names were crafted by non-professionals. Several web sites offer do-it-yourself naming software (http://www.rhymer.com; http://www.naming.net; http://www.brain-donor.com; http://nameideas.wordpress.com).

The press release announcing the Brain Donor® Naming System claims that it is "*the do-it-yourself system that transplants the naming know-how used by the experts directly into your marketing team's gray matter*" and that one can save $100,000 since "*top brand identity companies charge $100,000 to develop a new brand name*" (prweb.com, 2009). A number of product names were the result of contests using non-professionals. For example, Boeing's 7E7 was named "Dreamliner" on the basis of a contest with 500,000 submissions from 160 countries (Daye & VanAuken, 2010). In fact, there are companies in the business of soliciting public opinion to name a new product or service. One company offering this type of service has the tag line "*the crowd submits….you choose*." It describes the process as follows:

> ***"If you need a business name, domain name, or product name you can create a naming contest. Our namers, who are creative members of the public, will submit business name suggestions on your contest page. If you choose a winning name we award the namer the award amount. If our namers don't submit a suitable name, you can request a refund (http://www.namingforce.com)."***

Although the promotional literature does not mention it, this company's business model is supported by the evidence presented in Surowiecki's *The Wisdom of Crowds: Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations* (2004).Given that non-professionals do in fact develop (or at least suggest) names for new educational products, it is of value to know which criteria non-professionals consider important, and how these compare to professionals' recommendations. To this end, current and potential graduate students at one university were surveyed regarding what they thought to be the desirable features in a name for an online series of courses to be offered by the university. Their perceptions can then be compared with the practices espoused by naming practitioners.

REVIEW OF THE LITERATURE

Taxonomies of Naming Practices

A variety of approaches to naming can be identified (Rivkin & Sutherland, 2004), and these are often reflected in the various taxonomies for classifying product names. The complexity of the classificatory system is a function of how broad or narrow these classifications are. The broadest classification is "meaningful versus unrelated" names. Unrelated names offer no clue as to what the product is about, whereas meaningful names provide some type of clue as to its nature. Meaning can be bestowed by either explicitly specifying the nature of the product in the name, associating the name with some related image, or indicating a product's attributes or benefits in the name (Kohli & Suri, 2000; Kohli, Harich, & Leuthesser, 2005). Since the level of relatedness between a product and its name is a matter of degree (Thompson 2011), based on level of relatedness, product names can be classified as either abstract (e.g. *Prius*), suggestive (e.g. *Flickr*), or descriptive (e.g. *PlayStation*).

Igor International (2010), a company in the naming business, uses a four category system to classify names:

- **Functional/Descriptive,**
- **Invented,**
- **Experiential**
- **Evocative.**

Two methods for creating Invented names are cited: (1) Greek or Latin roots and (2) poetic (such as rhyming). Experiential names can be distinguished from ones that are Functional/Descriptive because "experiential names offer a direct connection to something real, to a part of direct human experience. They rise above descriptive names because their message is more about the experience than the task (p. 8)." As examples from Web portals, Igor International points to *Infoseek, GoTo, FindWhat*, and *AllTheWeb* as Functional/Descriptive names. Examples of Experiential web portal names are *Explorer, Magellan, Navigator*, and *Safari.* Lastly, Evocative names according to Igor "evoke the positioning of a company or product, rather than describing a function or a direct experience (p.9)." Yahoo is offered as an example of a Web portal name that is Evocative. A more detailed taxonomy, reported at rhymer.com, classifies names into nine categories:

- **Coined (e.g. *Nu Skin, Altima, Microsoft*);**
- **Common Words with a Twist (e.g. *Balance Shoes, Dollar Tree*);**
- **Surnames and First names (e.g., *Wendy's*, *Smucker's, Oscar Meyer, Papa John's Pizza, Ford Edsel*);**
- **Telescoped or Alpha-Numeric names (e.g. *3M Company, A-1 Steak Sauce, 7-UP*);**
- **Names with Deviant Spellings (*Krazee Kids, Kandy Korn, Tuff Skins, Xtreme*);**
- **Acronyms and Abbreviations (*IBM, KFC, CNN News*);**
- **Geographical (*American Airlines., Philadelphia Cream Cheese, Kentucky Fried Chicken, Evian*);**
- **Alliterative or Rhyming (*Roto Rooter, Cellular Source, Peter Piper Pizza, Water World, and Bargain Basement*);**
- **Prestige (*Lady Di, Pierre Cardin*).**

An even more detailed 20-category scheme is presented by Merriam Associates (http://merriamassociates.com), which overlaps somewhat with the rhymer.com taxonomy. Merriam's nomenclature has in common with the rhymer.com system the categories of geographical names and coined names (called fabricated by Merriam Associates). The term Ideophonmes in the Merriam Associates classificatory system deals with the same type of names as captured by the telescopic and alphanumeric classification in rhymer.com. The Alliterative or Rhyming category in the rhymer.com system is simply called Alliteration in the Merriam system, but the examples given show that it includes both alliterative and rhyming names (an example of alliteration is *Dunkin Donuts*, whereas *Piggly Wiggly* is a rhyming name). The category of surnames and first names in the rhymer.com system is similar to the Founder's name category (e.g. *Ford, Michelin*) in the Merriman system, although some names used for products are not the founder's name.

Certain of the rhymer.com name categories are divided into more discrete units in the Merriman taxonomy. The category called Acronyms and Abbreviations by rhymer.com is broken down into its two individual components in the Merriam system. The rhymer.com category of "common words with a twist" is encompassed by three distinct Merriman categories: Mimetics (alternative spelling, such as *Krazy Glue*), Onomatopoeia (naming something on the basis of a sound associated with it, such as the "sizz" sound of a steak cooking in *Sizzler Steakhouse*), and Oxymoron (e.g. *True Lies*). Unique to the Merriman system are the categories of:

- **appropriated (e.g. *BlackBerry* phone, *Apple* computer),**
- **classical (Greek , Latin; e.g. *Volvo*, which mean rolls in Latin),**
- **descriptive (e.g. *E-trade*),**
- **evocative (.g. *Frigidaire*),**
- **foreign,**
- **historical,**
- **humorous (e.g. *Cracker Jack*),**
- **composition (*Power Book*, *Page Maker*),**
- **merged (*Rolls-Royce*), and**
- **Mythological (e.g *Mercury*).**

Historical trends in naming practices have been observed and may reflect fads (Glynn & Abzug, 2002). For instance, Rivkin, and Sutherland (2004) report that the use of hyphenated names is on the decline. Sebba (1986) explored the phenomenon of names ending in "ex" (e.g. Kleenex, Kotex, Windex), which was uncommon prior to 1920.

Kohli and Hemnes (1995) and Delattre (2002) determined that new corporate names are generally shorter and more likely to be coined words and to have fewer geographic associations. The use of acronyms is on the rise, such as KFC instead of Kentucky Fried Chicken or DQ instead of Dairy Queen.

However, as Rivkin, and Sutherland (2004) point out, initialization only works well if the company is already well established (IBM, GE, GM). Latin and Greek names continue to be popular, especially in corporate names; Muzellec (2006) reports that 34% of corporate names that had changed dramatically became Latin or Greek in derivation or in sound.

Perhaps this is because classical names imply prestige (Rivkin, & Sutherland, 2004). The same may be true of foreign names, hence the creation of faux –foreign names such as Haagen-Dazs.

Professional Consensus on Desirable Features in a Name

There is some consensus among professionals that names should be distinctive, short, easy to spell, pronounceable, memorable, and suggestive of the product's benefits (Bao, Shao, & Rivers, 2008; Hendricks, 2010; Keller, Heckler, & Houston, 1998; Klink, 2000; Kohli & LaBahn, 1997; Kollmann & Suckow, 2007; Opatow, 1985; Robertson, 1989; Sen, 1999; Turley & Moore, 1995; Zinkhan & Martin, 1987).

According to a firm named Strategic Name Development (www.namedevelopment.com), the litmus test of a good name is "memorability." Memorability is recognition and recall. Notably, these two features of a good name are not necessarily compatible. Research suggests that descriptive or suggestive names are easier to recall than coined or arbitrary names, but they are not as distinctive as coined names (Kohli & Suri, 2000).

Although with extensive repeated exposure through advertising one can make almost any name memorable, certain name features enhance recall. Kohli and Suri (2000) found that descriptive and suggestive names are easier to recall than arbitrary and coined names.

Some authorities in the field of naming insist that good names are ones that rhyme (Maile & Bialik, 1989), not only because they are esthetically appealing, but also because they are more memorable and believable (Fortin, n.d.); however, this proposition is not universally accepted.

There is evidence as well that desirable name features may not be independent of the specific product or service (Peterson & Ross, 1972).

For instance, as noted by rhymer.com, the alliteration "Tiny Tots Toys" is appealing for a children's goods, but "Comfy Coronary Catheters" would not be a desirable name for a medical product. Likewise, alpha-numeric brand names may be most appropriate for high-tech, and futuristic products (Pavia & Costa, 1993).

View of Good Names from the Perspective of Persons Not in the Business of Naming

Several studies have investigated what people who are not directly in the business of developing product names consider to constitute the features of a good name. The e-entrepreneurs' view of good naming practices was explored in a survey directed at German e-entrepreneurs (Kollmann & Suckow, 2007) who were asked to rate the importance of 12 characteristics on a scale of 1= not at all important to 5= extremely important. The 105 respondents' ranking of these characteristics based on the mean rating (shown in parentheses) was: #1: ease of recall (4.42), #1: ease of recognition (4.42), #3: domain availability (4.32), #4: positive connotations (4.19), #5: distinctiveness (4.13), #6: ease of pronunciation (3.90), #7: overall liking (3.88), #8: versatile among countries/languages (3.80), #9: consistent with company image (3.73), #10: no negative connotations (3.64), #11: versatile (production/markets) (3.63), and #12: ease of trademark registration (3.50).

Kollmann and Suckow (2007) compared their results with ones from an earlier survey conducted by Kohli and LaBahn (1997) with 101 product brand managers. Kohli and LaBahn used importance ratings on a 7-point scale, so the means are not directly comparable, but if the characteristics in the two studies are ranked by their respective means, the result of the two studies can be compared.

The items, ranked based on the mean ratings reported in the Kohli and LaBahn (1997) study, were as follows: #1: relevance to product category (5.99), #2 connotations (5.83), #3 overall liking (5.79), #4: ease of recognition (5.77), #5: distinctiveness (5.49), #6: ease of recall (5.42), #6: consistency with company image (5.42), #8: ease of trademark registration (5.14), #9: ease of pronunciation (5.07), #10: consistency with existing product line (4.95), #11: profane or negative connotations (4.59), #12: versatility for use with other products (3.61), and #13: carriers over well to other languages (3.18).

Kollmann and Suckow (2007) point to the greater importance placed on recognition and recall of the brand name in their study compared with the earlier Kohli and La Bahn investigation. They attribute the difference to the influence of the net economy, although demographic differences in the characteristics of the two samples may also have been a factor in this difference.

Although neither Kollman nor Suckow (2007) nor Kohli and LaBahn (1997) had used naming professionals in their respective studies, their respondents did have some marketing experience. The true amateurs' perceptions of good naming practices were studied by Kohli and Suri (2000), who asked 90 college undergraduates to evaluate the brand names on overall liking and then looked at the relationship of likability to the type of name. Generally, the preferences from most-liked to least-liked names were: descriptive, suggestive, arbitrary, and coined. (The one exception was a flu medication where the coined name was preferred to the arbitrary name.) Also, there were differences in the recall of the names as a function of these four classifications. That is, meaningful names (descriptive, suggestive) were better recalled than unrelated names (arbitrary, coined). The worst on recall were the arbitrary names. A follow-up study (Kohli, Harich, & Leuthesser, 2005) showed that after repeated exposure, the likability of unrelated names increased, but meaningful brand names continued to be perceived more favorably than unrelated names. It is probably no accident that the majority of brand names are descriptive or suggestive rather than arbitrary or coined.

AIMS OF THE PRESENT STUDY

Kohli and Suri (2000) identified college students' perceptions of good names by examining which types of names they liked and disliked. Overall, their preferences reflected and matched the features that most naming experts recommend in a good name. However, since good and poor names may be tied to the nature of the product (Pavia & Costa, 1993; Peterson & Ross, 1972). The purpose of the present study was to directly determine which naming conventions are endorsed by consumers (students) in the context of naming an online program to be offered by a traditional university. It should provide an answer as to whether amateurs can be trusted to select a good name for an online program.

METHOD

Drawing on the various approaches to crafting possible names and suggested critical features of good names, 16 characteristics were presented to the participants as part of a comprehensive questionnaire designed to collect student opinion about what to name an online program of courses. The respondents were asked to rate the importance of each characteristic using a four-point Likert scale: 1= not important, 2=slightly important, 3=moderately important, and 4=very important.

A "no opinion" option was also provided. In the order as they appeared on the survey form, the 16 items were: self-explanatory, original, memorable, Latin word, Greek word, English word combinations, coined (completely made up word), has a meaningful acronym, arouses your curiosity, conveys prestige, rhymes, play on words (using words that have multiple meanings), short, easy to pronounce, has appealing associations, suggests/hints at the key features.

The list is by no means comprehensive, but it does cover the most commonly cited characteristics of names and approaches to naming.

E-mail invitations to participate in a survey about naming the online program were mailed to 2,619 current and prospective graduate students. The invitation contained a link to an Internet-based survey. There were 167 respondents (6.3% response rate), who were about equally distributed between current students and prospective students (accepted but not enrolled). After eliminating respondents who either indicated that they had no opinion about a given characteristic (*n* =7 to24) or who left the item blank (*n* = 18 to 24) there remained 144 respondents who rated at least one of the 16 items and 92 who provided ratings for all 16 items.

RESULTS

Table 1 reports means and standard deviations statistics on the importance ratings of the 16 characteristics. Summary descriptive statistics using both pair-wise and list-wise deletions are given. It is claimed by some statisticians that computing means on ordinal level data is inappropriate (a position with which I disagree); therefore for the 92 respondents who answered all 16 items, mean within-person ranks are also reported.

Both parametric (One-way Repeated Measures ANOVA) and non-parametric (Friedman test) tests were run on the data from the 92 respondents.

Table: 1
Ratings of the Importance of Characteristics of an Effective Name for a Program of Online Courses

Characteristic	All Cases (*n* ranges from 119 to 144)			Cases with No Missing Ratings (*n* =92)		
	n	*M* Rating	*SD* Rating	*M* Rank	*M* Rating	*SD* Rating
self-explanatory	142	3.68	.53	12.96	3.73	.44
memorable	141	3.62	.70	12.80	3.63	.64
easy to pronounce	140	3.44	.76	12.17	3.46	.73
appealing associations	136	3.31	.82	11.65	3.36	.76
suggests/hints key features	139	3.28	.85	11.50	3.30	.84
short	140	3.11	.90	10.48	3.09	.91
conveys prestige	139	3.00	.96	10.13	2.93	.99
original	144	2.96	1.04	10.33	2.97	.96
arouses curiosity	139	2.84	1.06	9.33	2.73	1.05
has meaningful acronym	134	2.14	1.03	6.86	2.07	.98

English word combinations	**119**	**2.03**	**1.10**	**6..44**	**1.97**	**1.06**
play on words	**138**	**1.83**	**.96**	**5..65**	**1.75**	**.94**
coined	**129**	**1.45**	**.79**	**4.42**	**1..41**	**.77**
rhymes	**134**	**1.40**	**.75**	**4.24**	**1.37**	**.72**
Latin word	**126**	**1.19**	**.56**	**3.49**	**1.14**	**.48**
Greek word	**127**	**1.19**	**.56**	**3.55**	**1.15**	**.51**

Since Mauchly's *W* test indicated that the assumption of sphericity had been violated [χ^2 (119) = 569.13, *p* =.0000], the degrees of freedom were adjusted using the Huynh-Feldt correction (ε = 0.79).

The ANOVA was statistically significant even after this correction [*F* (10.42, 948.44) =147.97, *p* = .000, partial *eta* ^{2}= .62]. The non-parametric Friedman test on ranks was also statistically significant [χ^2 (15) =865.41, *p* =.000].

The results (*p*-level) of the LSD pair-wise post-hoc tests are reported in the Appendix. Of the 120 comparisons, 97 (81%) reached statistical significance (*p* <.05).

If a Bonferroni correction for multiple comparisons is applied (*p* = .004 required for statistical significance), only an additional 3 comparisons become non-significant.

Notably, the importance of the characteristic "English word combinations" failed to differ significantly the most (10 of 15) from the other characteristics.

The pattern of average importance ratings is similar in the larger sample and the smaller sample (created based on pair-wise vs. list-wise deletions for missing values).

For the smaller sample, the mean ratings ranged from a high of 3.73 (self-explanatory) to a low of 1.14 (Latin word).

The six characteristics with average ratings above 3.0 (i.e. above moderately important) in both samples are:

- **self-explanatory,**
- **memorable,**
- **easy to pronounce,**
- **has appealing associations,**
- **suggests/hints at the key features,**
- **short.**

Based on the LSD tests, the desirability for the name to be self-explanatory was significantly greater than the desirability of the all characteristics other than memorable. Considered to be very unimportant (average ratings below 2=slightly important) were a requirement for the name to be a Greek or Latin word, to rhyme, or to be a play on words. Also rated low was the need for the name to be a coined word.To determine if there were more basic relationships underlying the desirability of the 16 characteristics, the data were submitted to a principal components factor analysis with Varimax rotation.

The five components with an eigen value of at least 1 explained approximately 64% of the variance. The characteristics loading .3 and above on each of the five retained components are reported in Table 2.

The first factor was named "Distinctiveness" because it deals with aspects that make a name unique. That is, it calls for the name to be original and to arouse curiosity; coined names are of this sort, and so it makes sense that this naming strategy was also part of the first factor. Factor 2, which was named "Classical Orientation," is defined primarily by preference for names that are Latin and Greek words in origin. The third factor was named "Suggestiveness" because it is defined primarily by the requirements that the name (a) suggest/hint at the key features and (b) that it possess appealing associations. The fourth factor clearly captures a preference for "Simplicity" in a name (easy to pronounce, short) and hence that is the name used for it.

Only one characteristic --self-explanatory --positively defined the fifth factor. Another characteristic -- coined-- loaded negatively on it. It is readily apparent that coined names can't be self explanatory and so this structure is to be expected. Thus, the fifth factor seems to capture a preference for descriptive names, and so I call it "Descriptiveness."

Table: 2
Loadings of Features on the Components Underlying the 16 Features

Factor 1: Distinctiveness	
original	**.75**
arouses your curiosity	**.68**
coined (completely made up word)	**.67**
conveys prestige	**.55**
play on words (using words that have multiple meanings)	**.54**
rhymes	**.49**
Meaningful acronym	**.45**
Factor2: Classical Roots	
Greek word	**.95**
Latin word	**.96**
rhymes	**.51**
English word combinations	**.43**
Meaningful acronym	**.35**
Play on words	**.33**
Factor 3: Suggestiveness	
suggests/hints at the key features	**.77**
has appealing associations	**.73**
memorable	**.65**
Arouse curiosity	**.32**
English word combination	**.30**
Factor 4: Simplicity	
easy to pronounce	**.85**
short	**.76**
has appealing associations	**.43**
Play on words	**.33**
Factor 5: Descriptiveness	
self-explanatory	**.89**
Coined	**-.31**

DISCUSSION

Naming experts insist that the name of a new product exerts a very powerful influence on whether it will be successful. The counter opinion is often expressed by a quote from Shakespeare's play Romeo and Juliet:

"What's in a name? That which we call a rose by any other name would smell as sweet [Romeo and Juliet (II, ii, 1-2)]. Most likely, it is the case that a bad name can hurt the marketability of a new product more than a good name can help it. Naming professionals tend to warn that inappropriate names created by inexperienced amateurs may lead to dire consequences.

The purpose of this study was to determine if non-professionals (graduate students in this case) would endorse the naming conventions that the professionals espouse, although it must be recognized that there is no complete consensus in this regard even among the professionals. Overall, the results show that members of the general public do recognize the critical features of good naming practices. According to our respondents, a good name for the program of Internet-based courses should be:

- **self-explanatory,**
- **memorable,**
- **easy to pronounce,**
- **have appealing associations, suggest/hint the key features of the product.**

These recommendations are consistent with the guidelines presented in the professional literature for naming practices.

Previous studies indicated that descriptive and suggestive names have a higher overall liking than arbitrary and coined names (Kohli, Harich, & Leuthesser, 2005; Kohli & Suri, 2000). The results of the current study point to the same conclusion, given that self-explanatory and suggestive were rated as important features, whereas coined, Latin, and Greek names were rated as unimportant. My results also concur with the Kollman and Suckov (2007) finding that it is critical for the name to be memorable. In their study of entrepreneurs, the two most critical features of a name were judged to be ease of recall and ease of recognition, which together constitute memorability. In the present study, memorable was rated second highest in importance among the 16 rated characteristics.

The implication from this study is clear. If necessary, it may be cost effective and expedient to rely on nonprofessional (consumers) opinion about naming an Internet-based course delivery system. If one can afford it, it may be best to consult a professional experienced in the art of naming, but one can rely on the "wisdom of crowds" if necessary and select a name endorsed by a majority. These results add credence to the use of the general public for coming up with names.

LIMITATIONS

Although they were not naming professionals, the participants in this study were college-educated individuals. An unanswered question is whether their level of education was a critical factor in their ability to recognize what constitutes best practices in the business of creating product names.

It is unknown whether persons with lower levels of education could also effectively identify these practices. Perhaps this is a question that can be answered in future research.Some readers may have concerns about a factor analysis with 16 variables and a sample of 92 participants.

I acknowledge the danger of overfitting the data , but wish to point out that the problem may not be as serious as it appears on first blush. The issue of the proper sample size for an exploratory factor analysis remains debatable. Typical rules of thumb are based on either overall sample size or the ratio of variables to participants [see de Winter, Dodou, & Wieringa (2009)]. A very common recommendation is that the sample size should be at least 100, but some authorities on the subject contend that it can be as low as 50. In terms of the second criterion, most sources on the subject recommend that the ratio must be no lower than 5 participants for each variable, but ratios as low as 3:1 have been deemed acceptable by some methodologists. Notably, the more recent literature on this topic considers the recommendations based on sample size and on participant-to-variable ratio to be overly simplistic. The adequacy of a sample for an exploratory factor analysis depends on the communalities, loadings, number of variables per factor, and the number of factors. Generally, the stability of a factor solution improves with increases in

- **sample size**
- **communalities,**
- **higher ratio of number-of-variables to number-of-factors.**

However, the impact of the ratio of variables to factors decreases as the communalities increase (de Winter, Dodou, & Wieringa, 2009; Hogarty, Hines, Kromrey, Ferron, & Mumford, 2005; MacCallum, Widaman, Zhang, & Hong, 1999).Communalities, which indicate the percent of variance in a given variable explained by all the factors jointly, are a good guide as to the stability of a solution because they reflect the reliability of the variable. Preacher and MacCallum, (2002, p. 160) maintain that "as long as communalities are high, the number of expected factors is relatively small, and model error is low (a condition which often goes hand-in-hand with high communalities), researchers and reviewers should not be overly concerned about small sample sizes."

McCallum et al (p. 96) indicate that the mean level of communality should be to be at least .7 and that the communalities should not to vary widely. In the current study, the average communality was .65 (*SD*=.17), which rounds out to .7, and 11 of the 16 communalities were above .6.Generally, it is desirable for a factor to be defined by at least 3 variables. Usually, one would have to regard as unstable any factor on which fewer than three variables load. This requirement was met for four of the five factors. The exception was the factor labeled descriptiveness, which was defined by one variable with a positive loading and one variable with a negative loading. However, conceptually it made sense ("self –explanatory" and "coined" should be negatively correlated).

Finally, it must be recognized that the factor analysis was not central to this study, and the other conclusions stand without accepting the credibility of the factor analysis.

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APPENDIX

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	self-explanatory		.000	.235	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.005	.000	.000
2	original			.000	.000	.000	.000	.000	.000	.011	.694	.000	.000	.380	.000	.001	.006
3	memorable				.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.070	.002	.001
4	Latin word					.320	.000	.003	.000	.000	.000	.001	.000	.000	.000	.000	.000
5	Greek word						.000	.005	.000	.000	.000	.003	.000	.000	.000	.000	.000
6	English word combinations							.119	.113	.134	.132	.115	.132	.140	.128	.123	.128
7	coined								.000	.000	.000	.630	.002	.000	.000	.000	.000
8	meaningful acronym									.000	.000	.000	.010	.000	.000	.000	.000
9	arouses curiosity										.063	.000	.000	.009	.000	.000	.000
10	conveys prestige											.000	.000	.228	.000	.000	.002
11	rhymes												.000	.000	.000	.000	.000
12	play on word													.000	.000	.000	.000
13	short														.000	.012	.084
14	easy to pronounce															.251	.195
15	appealing associations																.525
16	suggests/hint key features																

Probability Levels of Pair-wise LSD comparisons