

«Invited Paper»

An Appetite for Home Economics Literacy: Convergence, Megatrends and Big Ideas

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ABSTRACT

The concept of literacy has taken wings in educational literature in recent years. In this paper, an investigation of the emerging folksonomy of home economics evident through the analysis of all refereed papers published in the International Journal of Home Economics is presented. Folksonomy is a vocabulary of tags emerging from the content being analyzed and represents a kind of taxonomy of text around a field. The frequency of textual occurrences and their depiction in a tag cloud is presented for consideration and compared with similar methodology used to analyse other artefacts in research conducted previously by Pendergast (2010). What is evident is that there is a consistently developing folksonomy associated with the field of home economics. What that means is that there is a high degree of predictability about the terms and phrases used by home economics professionals, at least in their officially published international journal. The research also investigated the frequency of terms related to 'literacy' appearing in the texts, revealing that it in fact has a high level of occurrence. The opportunity to further develop the notion of home economics literacy is one that can be launched from this premise. (*J ARAHE 20(2):57-65, 2013*)

KEY WORDS: Literacy, tag clouds, folksonomy, home economics.

INTRODUCTION

Convergence, megatrends and big ideas

Almost a decade ago, Pendergast (2006) introduced the concept of the convergent moment to the home economics profession as a way of highlighting the alignment of a range of key factors impacting on the profession which, taken together, provide a climate of opportunity for reflection and renewal, thereby ensuring the relevance and sustainability of the profession. These convergent factors can be seen as a catalyst for major reform, and include: 1) the past century of invention, development and changes in roles for men and women; 2) consumption and globalisation patterns; 3) generational characteristics and the emergence of the digital

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native as the Y generation; 4) features of 'New Times' and the need to be 'expert novices' (good at learning new things); and, 5) significant changes in individual and family structures impacting globally on demographic patterns and on the family's ability to fulfil its main functions as a fundamental social institution. These convergent factors remain relevant a decade later and have been instrumental in the call for future-proofing the profession made public in the International Federation for Home Economics (IFHE) Position Paper (IFHE, 2008), launched on the 100th anniversary of the professional association.

More recently, a glimpse into the future of the profession has been facilitated in the book *Creating Home Economics Futures: The next 100 years* (Pendergast, McGregor & Turkki, 2012) launched at the 2012 World Congress of the IFHE. Pendergast et al (2012) share the concept of megatrends, which are defined by Hajkowicz and Moody as a "...collection of trends, patterns of economic, social or environmental activity that will change the way people live

and the science and technology products they demand” (2010, p.2). These probable trends for the future provide us with a glimpse of what the profession of home economics needs to consider as it constantly reshapes its form and function to remain relevant and contemporary, whilst still remaining faithful to the core values, purpose and philosophy of the profession.

The global megatrends formulated by futurist group, the Copenhagen Institute for Futures Study, identifies ten megatrends towards the year 2020, these being: ageing; globalization; technological development; prosperity; individualization; commercialization; health and environment; acceleration; network organizing; and urbanization (see <http://www.cifs.dk/scripts/artikel.asp?id=1469>). In a similar but more finely pointed report, the Organization for Economic Cooperation and Development (OECD) released the report, Trends Shaping Education, (OECD, 2013) which identified five major trends that are affecting the future of education and setting challenges for policy makers and education providers alike, viz: global world; living well; labour and skill dynamics; modern families; and infinite connections. The similarities in these trends is of course expected, and highlights the capacity for us to analytically envision the future, given reflection on past trends and taking into consideration contemporary times. What trends and megatrends cannot do, however, is take into consideration the wild card or unexpected events, though futurists always point to the reality that these will occur, but their nature is generally unpredictable.

The purpose of looking to trends is to make informed, evidence-based decisions about the future. The home economics profession continues to evolve in this context of taking a global view, and thinking proactively about shaping the future.

Looking to the home economics scene, a recent gathering of home economics professionals occurred in Canada in 2013. The purpose of the biennial symposia was to provide a regional forum to discuss issues related to the profession. In an epilogue to the proceedings, Gale Smith reflected on the event and noted that home economists and the home economics profession has always historically and continues today to respond to the social issues of the times. Her speculation points again to big ideas evident in the trends and megatrends already noted, that is:

[W]hat are the social issues of the 21st Century where our daily life is impacted by increasing globalization, corporate control of the food supply, the ubiquitousness of the

internet and access to technology, increasing erosion of the middle class and the disparity between rich and poor? At the Symposium we heard reports on such as, financial illiteracy (e.g., student debt), health issues (such as obesity, stress, body image, poor nutrition), environmental issues (e.g., those related to textile production, sustainability), social justice (e.g., poverty, racism, gender discrimination), and influence technological advances such as web-based learning and social media (e.g., Facebook, Twitter)(Gale Smith, 2013, p.268).

Importantly, Gale Smith (2013) pointed to the opportunity to have dialogue on the implications of these issues for current home economics curriculum and practice, and as she has expressed, the “capitalization” of home economics “potential to address these areas in unique ways that emphasize that literacy is not just knowing. It also involves the ability to make decision and apply knowledge to everyday living” (p.268).

Home economics literacy

In making this observation, Gale Smith makes an important link from the realm of knowledge, to the capability to make decisions and apply those decisions, and to the notion of ‘literacy’. The International Federation for Home Economics similarly argues that the thread or essential ingredients that all subjects, courses of study and professionals identifying as home economists must exhibit have at least three essential dimensions:

- A focus on fundamental needs and practical concerns of individuals and family in everyday life and their importance both at the individual and near community levels, and also at societal and global levels so that wellbeing can be enhanced in an ever changing and ever challenging environment;
- The integration of knowledge, processes and practical skills from multiple disciplines synthesised through interdisciplinary and transdisciplinary inquiry and pertinent paradigms; and
- Demonstrated capacity to take critical/ transformative/ emancipatory action to enhance wellbeing and to advocate for individuals, families and communities at all levels and sectors of society (IFHE, 2008, p.2).

Does this constitute ‘home economics literacy’? The concept of literacy has taken wings in educational literature in recent years. The notion of literacy presented by Gale Smith

(2013) and reinforced in the three essential dimensions advocated by IFHE (2008) is an important segue to the notion of home economics literacy and one of interest in this study.

The concept of literacy is increasingly evident with terms such as food literacy, financial literacy, and health literacy now commonplace language in their fields. Nutbeam (2000), for example, is credited with developing greater depth of understanding in the field of health education, through the formulation of three levels of what is now known as health literacy: functional; interactive; and critical. In this context, functional health literacy focuses on the communication of information while interactive literacy moves to the more complex development of personal skills. Critical health literacy is the development of capacities to enable personal and community empowerment (Pendergast, Garvis, & Kanasa, 2001).

More recently, the term 'food literacy' has emerged, adopting the three levels generally used in the health schema. That is, an amalgamation of functional, interactive, and critical dimensions of food and nutrition that collectively can be described as food literacy. According to the Eat Well South Australia Project (Government of South Australia, 2010, np), food literacy is the "capacity of an individual to obtain, interpret and understand basic food and nutrition information and services as well as the competence to use that information and available services that are health enhancing". So what of the idea of home economics literacy?

It is in this space and way of thinking that this study set out to explore the current public image that the home economics profession is presenting through its major publication that could be argued to define the global profession at this time, the *International Journal of Home Economics* (IJHE). The methodology of this work follows that of Pendergast (2010) who has previously utilized the concept of tag clouds to build a folksonomy of home economics. The data presented here will extend that process and will particularly look for evidence related to the terminology around literacy.

Tag clouds

Just over five years ago, Salonen (2007) advocated the use of tagging to be a new approach to provide visual representations of the word content of a resource in which attributes of the text such as size, font style, or color can be used to represent and classify features, including the frequency of the associated terms (Halvey, & Keane, 2007).

Half a decade later, the world is familiar with the notion of tag clouds as representational visualisations that commonly occur as features of websites, enabling readers to scan the relational values presented to determine if the site content is of relevance and interest. In this research, the generation of tag clouds is used to determine relational values, as a visual means to present content information, and to appeal to readers who respond best to a multi-literacy approach.

The use of tag clouds enables information retrieval and visualization concurrently and simultaneously serves as a hierarchy (Pendergast, 2010). Importantly, tagging contributes to the development of a folksonomy, which is a vocabulary of tags emerging from the content being analyzed. Thomas Vander Wal coined the phrase 'folksonomy' as a means of categorizing what is appearing on the Internet in particular (Pink, 2005). It is called folksonomy to represent its meaning as a people's taxonomy. By identifying the common words used in a text and tagging them in a tag cloud, the development of a hierarchy or folksonomy occurs. In this way, a classification of the content is possible and individuals can use tags or words to search for information or sites. In this way tags become a type of meta data of the text contained within. Over time, tags become associated with a field or area, creating a kind of social picture and knowledge sharing. In essence, the tag cloud translates the emergent vocabulary of a folksonomy into a social navigation tool (Sinclair, & Cardew-Hall, 2008). It is this idea of socially constructed tagging that is of interest in this study.

Despite the popularity of tag clouds, there have been very few studies evaluating their effectiveness in terms of accuracy of understanding by the viewer of the intended depiction and the academic literature is largely silent in this arena (Sinclair, & Cardew-Hall, 2008). Interestingly, Hearst and Rosner (2008) revealed that there is some criticism about the use of tag clouds as some respondents perceive a bias towards popular ideas and the downgrading of alternative views. This study seeks to remedy the deficiency in the literature about the use of tag clouds, particularly those generated from the text and interrogated in terms of the way the profession is presented.

Three years ago, Pendergast's (2010) investigation of selected home economics artefacts using tag clouds to analyze texts revealed a consistency in the relational aspects of many terms which appeared in the documents. Tag clouds were used to create a visual hierarchy of the text and evidence of frequently used proactive terms was abundant and connected strongly to the IFHE Position Paper (2008). The

high degree of consistency suggested at the time there was a folksonomy emerging, even with the limited analysis conducted at that point. Of concern was the use of gendered terms which favored feminine terminology.

In continuing this work, of particular interest in this study is an analysis of all refereed papers published in the *International Journal of Home Economics* (IJHE) which serves as a key artifact in the profession at this time.

The study has the following objectives:

- 1) utilize tag cloud methodology to conduct an objective word content frequency analysis of selected resources;
- 2) depict the frequency using tag clouds;
- 3) investigate the frequency of the terms related to 'literacy' appearing in the texts; and
- 4) consider whether there is a continued development of folksonomy and what implications this has for the field of home economics.

METHODOLOGY

This study utilized a recent ICT tool, tag clouds, as the method of text analysis and of representation of the word content of selected documents. To prepare the text for tag cloud production, the following occurred.

1) References, flysheets, editorial, calls for papers, biographies, book reviews, editorial information, editorial and contents pages were removed.

2) Common jargon phrases were found and replaced without a space, so as to differentiate them from other usages; for example:

- (1) home economics became homeeconomics
- (2) lifelong learning became lifeloglearning
- (3) well being became wellbeing
- (4) home economist (s) became homeeconomist (s)
- (5) 21st Century became 21st Century

3) The number of words was totaled using word counting software: Microsoft Word.

4) For the first analysis, individual words were sorted by frequency. A second analysis undertook a similar process, however words that had similar meanings were combined to reflect the number of times that idea was used. Stem words (lemmas) were identified and used rather than individual inflectional word-forms; for example: professions, professional, and professionalism, are counted as examples of the lemma profession. In this way, overrepresentation of related concepts was eliminated.

5) The Oxford collection of top 100 functional words

were deleted from both sets. Many of the most frequently used words are short functional words whose main purpose is to join other, longer words rather than determine the meaning of a sentence. If these words are left in the text then they are likely to appear as the main elements of the tag cloud. The tag cloud therefore would reflect function words rather than content words. These words were taken from the billion-word Oxford English Corpus (Oxford University Press, 2009).

6) The two sets of words were placed in order of frequency in a tag cloud, with 1/20 frequency of the word used as the font size. Tag clouds were used in this study to provide a visual representation of the frequency of content words used in the selected texts. These frequency generated tags were then considered in terms of their potential contribution to the development of folksonomy.

Document selected for tag cloud production

One artifact was selected for analysis, the International Journal of Home Economics. This is the only global, refereed publication where research and contemporary thinking in the field can be published. As described in the Information for Contributor section:

The International Federation for Home Economics is the only worldwide organisation concerned with Home Economics and Consumer Studies. It was founded in 1908 to serve as a platform for international exchange within the field of Home Economics. IFHE is an International Non Governmental Organisation (INGO), having consultative status with the United Nations (ECOSOC, FAO, UNESCO, UNICEF) and with the Council of Europe.

This refereed journal brings together emergent and breaking work on all aspects of Home Economics, and most importantly, how we might improve and renew the everyday work of Home Economists. It features quantitative and qualitative, disciplinary and trans-disciplinary, empirical and theoretical work and will include special editions on key developments. It aims to push the boundaries of theory and research-to seek out new paradigms, models and ways of framing Home Economics.

All refereed publications in the journal from its launch in 2008 with two issues per year are included in this analysis. This includes Volume 1 Issue 1 up to and including Volume 6 Issue 1 and constitutes 11 issues and represents a total of 77 articles. There were 361,621 words analysed in the data set. This created a total of 10 303 base word cat-

egories.

RESULTS

The following tag cloud was produced after the analysis steps were followed. For this tag cloud, the top 100 terms were selected after functional lemmas were removed (Fig. 1).

The same data is presented in tabular form in Table 1 below. This form of data presentation is how this data might typically be presented. This highlights the limitations tabular presentation have compared to tag clouds, and vice versa.

Always of interest in the home economics profession is the place of people and the ways in which they are presented in our literature. This study revealed the following data of interest related to the human side featured in the home economics journal, presented in Table 2.

Further analysis was undertaken with the dataset to tighten the categories and reveal the top 50 stem words and these are presented in Table 3. In this case NVIVO analysis included words over 3 letters long, with relevant word stems, with the top 100 Oxford function words also removed. While this creates some minor movement in the data set, when comparing the analytic techniques of the datasets a high degree of alignment is evident and expected. This additional analysis allows for the stem words to collapse similar concepts, beyond the original analysis of the data.

The same data is presented in tag cloud form in Fig. 2. This form of data presentation is how this data might typically be presented. This again highlights the limitations tabular presentation have compared to tag clouds, and vice versa.



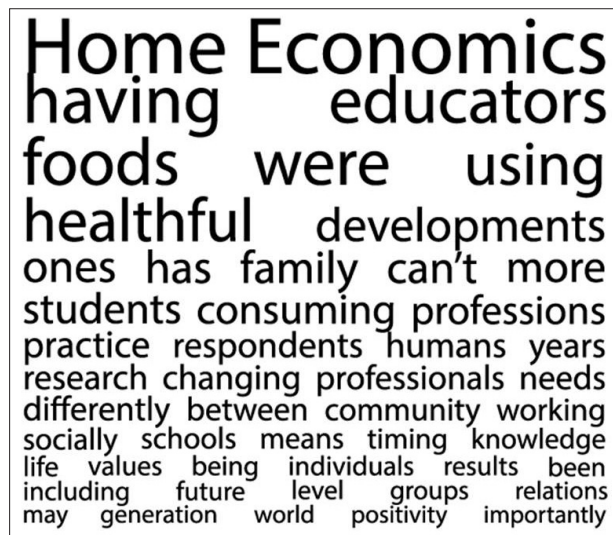
Fig. 1. Tag cloud of the base word frequency of terms in the IJHE Vol 1 (1) to Vol 6 (1). Top 100 words after removing functional lemmas. Presented where font size=frequency divided by 20.

Table 1. Base word frequency in IJHE Vol 1 (1) to Vol 6 (1), top 100 words

Base word	Frequency	Rank word	Frequency
1 Homeeconomics	1510	51 Figure	296
2 Were	1291	52 Children	286
3 Food	1050	53 However	286
4 Health	974	54 Data	281
5 Education	915	55 Values	279
6 More	869	56 Consumers	272
7 Study	735	57 Learning	269
8 Profession	717	58 Teachers	268
9 Students	639	59 Using	266
10 Between	620	60 Ifthe	262
11 Respondents	606	61 Field	259
12 Human	603	62 Dress	258
13 Research	565	63 Members	258
14 Been	527	64 Apparel	257
15 Social	520	65 Individuals	257
16 Family	509	66 Home	255
17 Knowledge	505	67 Participants	248
18 Life	501	68 Where	245
19 Such	483	69 Body	244
20 Used	458	70 Studies	244
21 Development	456	71 Personal	243
22 World	444	72 Household	240
23 Table	431	73 During	238
24 Many	424	74 Sciences	238
25 Consumer	419	75 Community	236
26 Future	417	76 Very	236
27 Professional	407	77 Cooking	232
28 Within	384	78 Individual	232
29 Should	379	79 Generation	231
30 Years	376	80 Higher	231
31 Different	371	81 System	231
32 Through	369	82 Significant	230
33 Being	355	83 Subject	230
34 Each	352	84 Influence	229
35 Both	349	85 University	228
36 Society	349	86 Literacy	227
37 Families	342	87 Needs	227
38 Those	341	88 Less	226
39 Need	339	89 Name	226
40 Women	336	90 Group	225
41 While	335	91 Part	225
42 Skills	331	92 Number	223
43 Level	327	93 Among	221
44 Consumption	324	94 Global	221
45 Practice	324	95 Based	218
46 Results	322	96 High	216
47 Important	321	97 Means	216
48 School	317	98 Countries	212
49 Change	315	99 Professionals	212
50 Three	303	100 Educational	210

Table 2. People related terms of interest and their relative frequency ranking

Rank	Word	Frequency
9	Students	639
11	Respondents	606
12	Human	603
16	Family	509
25	Consumer	419
37	Families	342
40	Women	336
52	Children	286
56	Consumers	272
58	Teachers	268
65	Individuals	257
Much further in the rankings 384	Men	96

**Fig. 2.** Tag cloud of the stem word frequency of terms in the IJHE Vol 1 (1) to Vol 6 (1). Top 50 words after removing functional lemmas. Presented where font size=frequency divided by 20.

DISCUSSION

Utilizing tag clouds to provide a visual hierarchy of the text enables a snapshot to be produced of what is otherwise a daunting presentation of textual information. These tags provide an easily accessible content analysis which is instantly able to be interpreted. Also presented in the results is a detailed breakdown in tabular form of the actual frequencies and rankings of the individual words. The inclusion of the two formats demonstrate the benefits and limitations of both modes of presentation.

It is important that this additional research reflects and builds upon previous work. In the previous study conducted by Pendergast (2010) investigating tag clouds produced from two key artefacts related to the profession at that time, a high degree of alignment of the terms used in the *IFHE Position Statement and the IFHE Congress Proceedings* was evident, with five words: home economics (1st and 2nd, respectively), profession (2nd and 1st), social (6th and 3rd), life (7th and 5th), and future (8th and 9th) appearing in the top 10 list for these analyses. These five words dominated in the visual impression presented in the tag clouds (represented by proportional font size), which meant they were used abundantly in the texts, suggesting a consistent emphasis on these terms in these artefacts. In this current analysis of the International Journal of Home Economics over the 11 issues to date, the word 'home economics' again emerges as the most frequently used word, with 'profession' (8th), social (15th), life (18th) and future (26th) also appearing in very large numbers throughout the journal.

The term 'family' was also high impact in the tag clouds created from the 2010 data set, and was the third most frequent and twelfth most frequent term in the Position Statement and Congress Proceedings, respectively. Likewise, for the journal articles analysed in this current study, family is the 16th most commonly appearing term. Interestingly, the word 'food' also strongly featured in the IFHE Congress Proceedings tag cloud, appearing in large font as it is the fourth most frequently used term. However, it did not feature in the tag cloud for the IFHE Position Statement. This might be explained by the difference in the purpose of the documents analyzed, with the IFHE Position Statement providing a broad, comprehensive coverage of the range of fields in the profession, while the IFHE Congress Proceedings included focused, context-specific aspects. For the current study, the term 'food' is the third most frequently used term, with 'health' and 'education' the fourth and fifth most frequently used terms across the journal articles.

Because the journal publishes refereed articles that are often research based, it might be expected that research related terms would appear in the data set. This is indeed reflected with the terms: respondents (11th); research (13th); and results (46th) featuring in the frequently appearing texts.

In this analysis and because of a particular interest in the notion of 'literacy', an investigation of the frequency of this word and related stems was conducted. The term was used 227 times and featured in the top 100 words at 86th ranking. This is a surprisingly high ranking and points to the

Table 3. Stem word frequency in IJHE Vol 1 (1) to Vol 6 (1), top 50 words

Stem word	Count	WP	Similar words
1 Homeeconomics	1552	0.61	Home economics, home economists
2 Having	1343	0.53	Have, having
3 Educators	1296	0.51	Educate, educated, educating, education, educational, educationally, educative, educator, educators
4 Foods	1292	0.51	Food, foods
5 Were	1292	0.51	Were
6 Using	1190	0.47	Use, used, useful, usefully, usefulness, uses, using
7 Studying	1090	0.43	Studied, studies, study, studying
8 Healthful	1081	0.42	Health, healthful, healthfulness
9 Developments	929	0.36	Develop, developed, developer, developers, developing, development, developments, developments, develops
10 Ones	902	0.35	One, ones
11 Has	899	0.35	Has
12 Family	890	0.35	Familial, families, families, family, family
13 Can't	881	0.35	Can, can't, canned, cans
14 More	874	0.34	More, mores
15 Students	844	0.33	Student, students,
16 Consuming	820	0.32	Consumable, consumables, consume, consumed, consumer, consumers, consumes, consuming
17 Professions	790	0.31	Profess, professes, profession, professions
18 Practice	734	0.29	Practical, practicalities, practicality, practically, practice, practiced, practices, practicing
19 Respondents	700	0.27	Respond, responded, respondent, respondents, responding
20 Humans	689	0.27	Human, humane, humanities, humanity, humans
21 Years	684	0.27	Year, yearly, years,
22 Research	683	0.27	Research, researchable, researched, researcher, researchers, researches, researching
23 Changing	677	0.27	Change, changed, changes, changing
24 Professionals	666	0.26	Professional, professionalism, professionalization, professionally, professionals
25 Needs	664	0.26	Need, needed, needing, needs
26 Differently	662	0.26	Differ, differed, difference, differences, different, differently, differing, differs
27 Between	636	0.25	Between
28 Community	622	0.24	Communal, communalities, communicate, communicated, communicates, communicating, communication, communications, communicative, communicator, communicators, communities, community
29 Working	612	0.24	Work, worked, working, workings, works
30 Socially	597	0.23	Social, socialization, socialized, socializing, socially, socials
31 Schools	588	0.23	School, schooled, schooling, schools
32 Means	586	0.23	Mean, meaning, meanings, means
33 Timing	565	0.22	Time, timely, times, timing
34 Knowledge	554	0.22	Knowledge, knowledgeable, knowledgeably, knowledges
35 Life	553	0.22	Life
36 Values	541	0.21	Value, valued, values, valuing
37 Being	537	0.21	Being, beings
38 Individuals	534	0.21	Individual, individualism, individuality, individually, individuals
39 Results	530	0.21	Result, resultant, resulted, resulting, results
40 Been	527	0.21	Been
41 Including	524	0.21	Include, included, includes, including
42 Future	522	0.20	Future, futures
43 Level	522	0.20	Level, level, leveling, levelled, levelling, levels
44 Groups	517	0.20	Group, grouped, grouping, groupings, groups, groups
45 Relations	498	0.20	Relate, related, relates, relating, relation, relational, relations, relative, relatively, relatives

Table 3. Continued

	Stem word	Count	WP	Similar words
46	May	494	0.19	May
47	Generation	492	0.19	Generate, generated, generates, generating, generation, generational, generations, generative, generator
48	World	485	0.19	World, worlds
49	Positivity	482	0.19	Posit, position, positioned, positioning, positions, positive, positively, positivity, posits
50	Importantly	476	0.19	Import, importance, important, importantly, importation, imported, importer, imports

level of engagement with ideas associated with literacy that are clearly frequently published in this journal. Although the idea of literacy presented by Gale Smith (2013) and reinforced in the three essential dimensions advocated by IFHE (2008) is not reflected in the journal, it seems to be a reasonable shift to imagine the development of home economics literacy.

Also of interest and consistent with previously research is the gendered nature of the terminology utilized in publications in the profession. In the 2010 data of the conference proceedings the term 'women' is the 63rd most common term used, appearing 83 times in the proceedings. By contrast, the opposing term 'men' does not make the top 100 list, appearing only 35 times. For the journal analysis reported in Table 2, 'women' appears as the 40th most common term, while men is 384th in the rankings. The term 'children' appears less frequently than women, however 'family' (16th) and 'familie's' (37th) are the most common of the people related terms.

CONCLUSION

The study set out to utilize tag cloud methodology to conduct an objective word content frequency analysis of all refereed articles in the International Journal of Home Economics from Vol 1 (1) to Volume 6 (1). In doing so, a frequency of textual occurrences and their depiction in a tag cloud has been presented for consideration and compared with similar methodology used to analyse other artefacts in research conducted by Pendergast (2010). What is evident is that there is a consistently developing folksonomy associated with the field of home economics. What that means is that there is a high degree of predictability about the terms and phrases used by home economics professionals, at least in their officially published international journal. The research also investigated the frequency of terms related to 'literacy' appearing in the texts, revealing that it in fact has a high level of occurrence. The opportu-

nity to further develop the notion of home economics literacy is one that can be launched from this premise.

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