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Lexicon and Commonplace Book: An Information Studies Terminology Primer

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ABSTRACT

The discipline of information studies is one of those areas that I enjoy teaching. I had the pleasure of teaching "IS 200 Information Literacy and Critical Thinking" during my post-doc at the University of Kentucky. One of the areas that I wish I could have done early in the development of this course was craft a primer on information studies terminology that helped establish what some of the baseline terms were given in the context of this course. This primer would have assisted discussions, since the primer laid out the groundwork for the direction of future readings the students would have needed to complete. The article (though almost a decade late) would have served this purpose.

1. Introduction

Hugh MacLeod from Gaping Void created a simple two-panel comic entitled "Information vs. Knowledge" as a simple visual comparison between the two concepts. The comic has become a memetic artifact within the tech industry and among information scholars as a means to discuss some of the standard terms used in this field. MacLeod's use of dots and lines in his knowledge design allowed the visual to be abstract enough that the graphic could fit the context of many of the projects that tech workers and information scholars were developing. Thus, the comic became a standard glyph that these professionals could use and modify to make connections between the familiar terms they were using and a model to explain how they thought of those terms. The glyph went through multiple visual overhauls (for example) to fit a branding statement of how a company thought about the work they were doing, a personal reflection of the connection between somebody's efforts to the broader field they are studying/actively working, or a part of an aesthetic project defining the connection between the artistic mind to the logical world of knowledge work. MacLeod's design (and all the various modifications to the original work) inspired the following primer in two ways:

- 1.) MacLeod's graphics are a great way to address the foundational terminology in this discipline. The pictures can be extended with added text and references to clarify these standard terms.
- 2.) Using these graphics as the focal point for information studies terms potentially prevents the falling down of a tautological rabbit hole of "information." It is straightforward to keep repeating the words data, information, and knowledge to define these terms within this field of study (Zins, 2007). The graphics help by adding "contextual depth" (i.e., giving a place to highlight examples of these terms) to the more substantial discussion of this discipline.

The following article is a personal reflection of how I use these terms with some scholarship to frame the broad implication of their connection to one another within the context of information studies, information literacy, and general critical thinking practices. Specifically, I want to focus on nine of the terms I regularly use when teaching these type of course.

I consider the elements below a living document. The structure and substance of the primer may be, from time to time, replaced with better models, scholarship, and visuals. An excellent place to test the structure and substance of this lexicon is one of the most foundational terms in this field.

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2. Lexicons and Commonplace Books

The format and methodological construction for the article is grounded in the lexicon approach, which can best be described as the presentation of the “stock of established words speakers can draw on when they speak and have recourse to in understanding what they hear” (Clark, 1993, 2) with the focus on a given field of study and the terms used by experts and professionals in that field. Lexicons tend to be focused on how this “community of words” are interrelated to one another and the field in which they exist based on their grammatical (patterns of usage) and semantic (the meaningfulness of the combination of letters that forms the word) properties within that field of study (Cruse, 2017).

The rationale for following for following this format and methodological construction is that the end result of this labor should be in the realm of a commonplace book that can be collective resource for those researching in the field of information studies. The concept of the commonplace book is compiling extracts for the purpose of collecting observations of the world to be published at a later date in a more refined manner (Hess, 2012). It is fair to state that commonplace books fill the realms in between a collection of manuscript notes to the transcription of the author’s mind into the printed page (Allan, 2010). Previous works with this moniker were one that combined the anthology nature of early scholarship and a quasi-diary that highlighted reflections in their area of focus.

This article follows this model of advance future discussions in information studies. The nine terms selected for this work tend to be the most common words spoken, read, and written in the classroom. The hope is by expanding their definition in this format that students will understand the mindset of those in this field. A reasonable starting place for this process in the simplest concept in terms of complexity and density of content.

2.1. Data

The most cellular of these terms is data. There are two critical levels to this term. A datapoint is a string of characters (letters, numbers, and symbols) that captures some aspect of the world that needs to be recorded. These “snapshots of reality” acts as the words that define the information studies field. Individual data points fit comfortably into the cells of a spreadsheet for easy access later (Kataria et al., 2008).

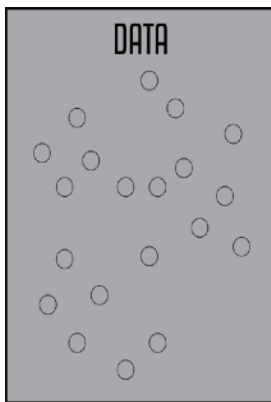


Figure 1 – The Knowledge Graphic with a focus of data.

A dataset is the collection of similar data points. Consider the picture to the left. Individual dots represent data points within the knowledge graphic. Those dots could be meaningful or not. We do not know. What matters in this example is that these data points can be gathered to be examined and interpreted to give one a better understanding of a topic, problem, or research question (Das & Schneider, 2007). Numbers like 5, 10, and 1600 are data points in real life. Without additional structure and context, we do not understand what they mean.

Both data points and datasets are still the most cellular of these terms, as both tend to make up the materials scholars and professionals use to create the research and products that define this field. Data is more than the quantitative flow of content; instead, it is essential to consider qualitative data points and datasets as part of these structures and processes of information studies (Charmaz & Belgrave, 2018). Both quantitative and qualitative data are helpful in this field, as both are a form of record keeping that comes from the coordination between the algorithm used to capture these datapoints, the programmer responsible for creating the algorithm, and the program used to sort the output of the programmer’s algorithm (Rehman, 2003; Lindlof & Taylor, 2017; Allen et al., 2008). These data points and datasets get turned into the second foundational term for this discipline.

2.2. Information

If datapoints are the words in this information studies paradigm, then it is fair to say that information is constructed into the sentences within the text of information studies. It is the most basic level that scholars, professionals, and lay audiences can use to explain the world in a meaningful way. When transmitted in whatever form, information expresses complete thoughts from the atomized data. Specifically, information occurs when datapoints are combined into one complete idea or when two or more datasets can be put together in a meaningful way to create a new view of the world. These concrete elements occur when new data provides additional meaning to established datasets within a system or when exposed to disconnected raw datapoints in a variety of locations (Paulson, 2019).

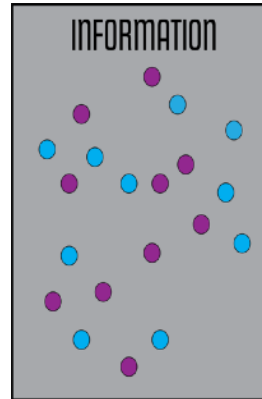


Figure 2 – The Knowledge Graphic with a focus of information.

Continuing the extension of the knowledge graphic on the left, the colors reflect additional datapoints that were added to the circles from the past data graphic. The two colors (blue and purple) can be code for high and low numbers in a trendline, domestic vs. international sales, analog vs. digital media, or anything other variables that categorized via a coding system (Patel & Prajapati, 2018; Duggan, Johnson, & Gott, 1996; Brauer & Judd, 2000). The knowledge graphic could have used more than two colors. Those colors were chosen for the purpose of simplifying the model. Colors in the knowledge graphic (like when dealing with information in the real world) add an element of repetition to the datapoints. We can start to group those circles into blue circles and purple circles.

Borrowing one more example from the real world allows us to add the additional datapoints of “Adelaide Avenue” to 5, “Downing Street” to 10, and “Pennsylvania Avenue” to 1600, thus giving us meaning to those previously meaningless numbers/datapoints. The average person would recognize this combination of datapoint as information in the form of an address. We might not know which city, state, province, or country these addresses are from, but we should know they are addresses based on our past experiences. More likely than not, the average person has mailed a

letter or looked up directions online. Therefore, those strings of datapoints are now meaningful. One more level exists in this field's first set of foundational terms.

2.3. Knowledge

As the most substantial of the first set of terms I use in information studies, knowledge occurs when context is added to various pieces of information so that a person can see patterns among the information they are exposed to daily. Context acts as the invisible or unstated thread that help pull together seemingly unrelated elements into one concrete idea that a person can follow. Beyond context, knowledge is gained when a person explicitly states these connections between information, datapoints, and/or datasets or implicitly surmises these connections through remembered past observations (Lester & Koehler, 2007).

Extending the paradigm from the past two sections means that the idea of knowledge can be framed as paragraphs within the text of information studies. Suppose we can describe a paragraph as a singular theme that is supported by multiple sentences to advance an idea. In that case, knowledge can also be crafted by using multiple pieces of information to develop a view of the world (Duke University's Thompson Writing Program, 2017). Knowledge in this metaphor would be grounded by:

- a declared claim with evidence coming from
- connected data and information that
- survives some level of scrutiny and analysis and
- links back to other data, information, and knowledge
- in a meaningful and contextually significant way.

These five points help expand the idea of knowledge being the foundation of fields of study and liberal arts disciplines, as there are truths supported by those who study in those fields and disciplines. The peer-review scholarship process, even with all of the issues surrounding this process, presents those truths to those that can evaluate their worth. Finally, once those truths survive the peer-review process, they can be connected to other truths within journals and other forms of scholarship.

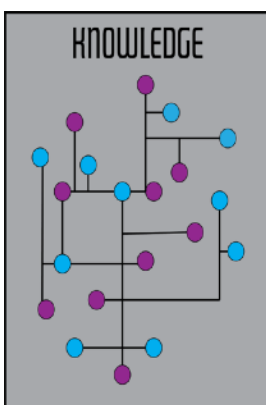


Figure 3 – The Knowledge Graphic with a focus of knowledge.

Looking at the knowledge graphic on the left, the lines highlight the connections between the various colorful circles from the past two examples. These connections could be based on time, location, common characteristics, or other logical linkages among the information in the system. These interrelations between the datapoint and information become the bonds that people use to get their bearings within the system.

The additional context from our real-world example would allow us to know that 5 Adelaide Avenue, 10 Downing Street, and 1600 Pennsylvania Avenue are the residential address of the leaders of Australia, the United Kingdom, and the United States. This knowledge can be meaningful to someone wanting to plan a trip to their nation's capital, write a letter to their head of state, or view the building online. Those three examples of

use cases for this knowledge example shift based on the cognitive needs of the person when they are working with the connections between data, information, and knowledge (González-Valiente, Santos, & Arencibia-Jorge, 2019).

These developed definitions of data, information, and knowledge mean that we can use these terms as the building block to elaborate on six additional terms that I often use in teaching courses in information studies. The first of these six terms look at the connections between information and data in a different light.

2.4. Intelligence

Suppose data, information, and knowledge are this field's foundational trio of terms. In that case, the following four terms could be considered the aptitude quartet, as they reflect the skills and talent one has in using and applying the foundational trio in everyday situations. The first of the aptitude quartet is intelligence, which for information studies can be defined as how quickly a person can access their memory for references from the past to aid a current situation (Oberauer et al., 2008). Often, intelligence is associated with a person's ability to use reason to address a problem rationally by inferring which set of rules works best in a given situation and deducing the consequences for following those set of rules (Lohman & Lakin, 2011). Thinking logically about the information and data in a given field allows a person to conceptualize how knowledge can be helpful in a given situation and create abstract models from the accepted reality.

Pivoting back to the information studies book paradigm, intelligence can be thought of as the well-crafted figures and models found within the text of information studies. The translation of findings from a research project into graphical representations of the work for a journal article (or some other academic work) is the result of intelligence. Part of the crafting process requires a level of education to ensure that the graphic is in a standard format that can be understood by those examining the work. A scholar is trained to select the suitable template to organize the data in a manner that is the easiest to access for a given situation.

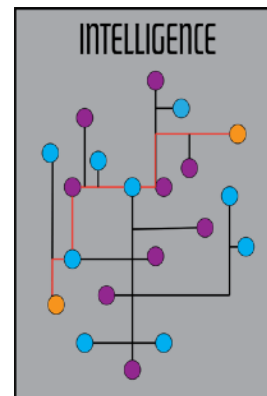


Figure 4 – The Knowledge Graphic with a focus of intelligence.

The picture to the left adds an orange line to the knowledge graphic, which represents both the quickest pathway between the two orange dots and the level of intelligence to connect the two points in this manner. The line being highlighted satisfies a specific logical requirement (i.e., the shortest pathway between two given points in the network) while following the rules of the system (i.e., the pathway uses the pre-established roads within the network). A casual observer would also be able to deduce that the pathway is the shortest (and most likely the quickest between those points) based on all the visual information included in the knowledge graphic.

Extending this concept to a real-world example would have us reading a recipe. A person looks at the instructions, conceptualizes the meal based

on that recipe, and proceeds to cook a meal expertly based on those directions. This example of intelligence is more than the ability to read; rather, it is using instructions, interpreting how best to follow them, and logically acting on those directions. How the directions are followed would depend on how the person was trained to cook, working in the likes and dislikes of the people being fed by this meal, and factoring in what is available in the kitchen. It is more than rote memorization of a textbook, as there is a practical consequence for the cook's actions (Clayton, 1983). All of these factors feed into the next term of the aptitude quartet.

2.5. Creativity

The second of the aptitude quartet correlates with the first of these terms. The baseline definition of creativity revolves around examining the elements associated with the foundation trio within a given field of study or practice and effectively coming up with an original appropriate action based on that examination (Runco & Jaeger, 2012). There is a minor variation of how workers in what would traditionally be considered the "creative industries" vs. those that work in information studies. Glück et al. (2002) shows a tendency for those in the creative fields to define creativity as any work that is an elaborate and technically correct product that a person would find as being well-crafted and fulfilling its purpose. This given work must also be an original creation that does not fit the "normal standards" of a given field and show off the individual style of the one that created the work. Creativity in information studies is how data, information, and knowledge craft exceptional and outstanding works by thinking through a given problem and using the raw materials described above (Eaglestone et al., 2006).

The information studies paradigm would denote creativity as coming up with a connection between two or more works that nobody else made from the various texts that make up information studies. Not only would the connection be original, but the inventiveness of the new connection provides a new perspective to the data, information, and/or knowledge that is being connected and (potentially) to the field of study as a whole. The other important note to this representation is that the byproduct of creativity tends to lead to more discussions about the elements that make up the connection (Jauk et al., 2013).

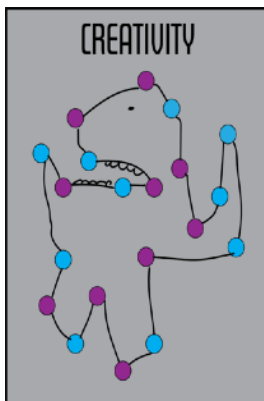


Figure 5 – The Knowledge Graphic with a focus of creativity.

Focusing on the picture on the left allows us to see the drawing of the knowledge monster within the various points on the graphic as a representation of creativity. This vision of the system "sidesteps" the previous connections to expand how the information could be used. A rigid system of interactions is transformed into a free-flowing design. Unconventional thinking of this nature allows for new trends and patterns in a field that could remain static otherwise.

In real life, modifying a previous recipe that adds a twist to the basic meal is an example of creativity or singers having their voice and style when performing well-established songs. The chef and the singer will tend to understand the basic rules of

their given field and know how to bend them, so they do not break the piece they are working on and still fit one's idea of a meal or song. While the last two terms dealt with the more concrete elements that one would associate with information studies, the next two are not as tangible.

2.6. Wisdom

The third of the aptitude quartet (wisdom) often needs clarification or is seen to be the same as intelligence. Both intelligence and its byproduct creativity are grounded in crafting something using the foundational trio of terms in the field of information studies. Wisdom is more intangible. Wisdom can be defined as the ability to grasp how human nature continuously changes based on new information and knowledge to facilitate informed decision-making. Clayton extends this concept further by stating that wisdom:

...operates on the principles of contradiction, paradox, and change. Human nature is being used here to refer to understanding of self and understanding of others. If a person has wisdom, their judgments and actions reflect that the individual can simultaneously love and hate; the only thing that is constant is change, both for themselves and others; acting, feeling, or thinking a particular way at one point in time does not automatically suggest that the individual will adhere to the same beliefs and perceptions at later points in the life cycle or even the same day.

(Clayton, 1983, 316)

Clayton continues this analysis of wisdom by denoting that while intelligence can be measured through a number of psychometric and clinical instruments, there are no such tests from wisdom. People can use critically analyze a person's actions and judgment to determine their wisdom. These studies are subjective in nature, as there are no established criteria or formalized rubrics in the psychological realm to conduct such measurements in a meaningful way. Kristjánsson (2020) highlights several models to describe wisdom as it relates to current trends in psychology. One of these models Peterson and Seligman's (2004) VIA Model is a descriptive classification framework with five wisdom strengths. Four of these (curiosity, judgment, perspective, and love of learning) fit the context of the definition above. The fifth one (creativity) should be grounded in intelligence, but the VIA Model does not conceptualize intelligence independently from wisdom. Ardel's (2004) model seems to better fit the discussion above, as there is consideration of the cognitive nature of wisdom being associated with a deep understanding of human life and its reflective nature of taking multiple perspectives of commonplace activities and concepts into account when in the personal perception of event. Wisdom, for lack of a better description, humanizes the foundation trio to make themselves more accessible on a daily basis.

Continuing to extend the information studies text paradigm places wisdom as writing down personal impressions of the various text and graphics of information studies on the index cards for reference later. This step of reframing data, information, and knowledge into something that is more personally accessible means that the text and graphics within the information studies works can be shifted to how those elements are meaningful away from their original context. Adding the personal voice to the elements within this example makes them more meaningful, as a definitional adjustment occurs when this process happens. Our

understanding of a given word, phrase, concept, or symbol is expanded based on these new discoveries crafting in our voice.

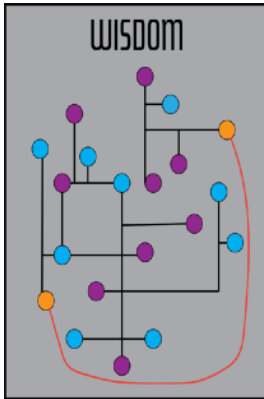


Figure 6 – The Knowledge Graphic with a focus of wisdom.

The knowledge graphic model for wisdom occurs when the original pathway between the two orange points is broken. Wisdom means creating a new pathway outside the system that still connects the points that does not go outside the boundaries of the graphic itself. It is not the shortest pathway (i.e., drawing a straight line between the two points), but it does not break the rest of the network. The graphic still “holds” together, even with this issue.

In real life, creating a wonderful meal based on the random ingredients one has in their kitchen is an example of wisdom. The wisdom aspect of this example is two-fold. First, the chef would recognize that the people they

were cooking for would enjoy a couple of the ingredients or the way the chef prepares them. Second, the chef would recognize the context of the meal. A chef more likely than not would not spend the time or effort creating a banquet for two with those random ingredients. There would be a level of restraint in the way they would prepare a more casual meal. That area of context leads to the final of the four aptitude quartet terms.

2.7. Insight

The last of the aptitude quartet is insight. Insight occurs when a person can look at meaningful information and the contextual clues among the relationships within knowledge patterns to determine what is helpful at any given time. The more traditional definition of insight would be how a person can determine somebody’s motives based on verbal and non-verbal communication actions. Generally, it is the aptitude to read people and situations accurately (Kebede, 2010; Detlor, 2003).

Going back to the information studies as a book paradigm established earlier in this article, insight is what you would highlight within the text of information studies. It is a skill to effectively highlight the correct text in any written work (ask anybody that has needed to study for an exam if this is a vital skill). Highlighting any sentence or paragraph in a book means that one would feel it is important enough that they would need to find it again at a later time. Insight as a process is scanning through the text, being perceptive enough to focus on the valuable phrase/sentence/paragraph, and marking it up with a given neon shade. The systematic aspect of insight is developing the brain (or an algorithmic system) enough to find the helpful signal among all of the noise that exists in a field of study (Logan, 2020).

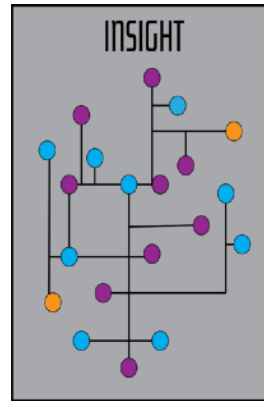


Figure 7 – The Knowledge Graphic with a focus of insight.

The two orange dots from the picture to the right highlight something that is special within this knowledge pattern. If the knowledge graphic represents how costs are interrelated in a store, the orange dots could be the products with the highest gross margin, those products that customers ask for the most or the products that are the best sellers. Finding that information among the multiple other datapoints in a system can be tricky for those not trained to interpret the information and knowledge they are examining. Insight represents knowing why the orange dots are significant among the blue & purple dots and lines in the system (Mikalef et al., 2020).

A final real-world example of insight would be walking into a large city supermarket and finding a particular ingredient is significantly cheaper than all of the other stores nearby. Beyond that, the person’s insight in this case can help them determine if the ingredient is of a good enough quality and can last long enough before spoiling. Insight could also inspire the person to come up with a dish based on get this ingredient (a la “Iron Chef”). Other factors gave the person this insight that will be discussed later on in this article.

2.8. Experience

The last two terms explored in this commonplace book presentation (Blair, 1992) could be described as the transformational duo, as both deal with how the foundational trio and aptitude quartet change the person using those raw materials described above and shift the “realm of the known” of the fields and practices connected to those raw materials (Kennedy, 2021). The first of the duo is experience, which can be defined as the influence of memories and processes on a person’s ability to interpret data, information, and knowledge. There is a psychological edge to this term as a person’s beliefs, values, attitudes and behaviors will play some role in the personal development of experience (Tanesini, 2016; March, 2020).

Going back to the information studies book paradigm, experience can be framed as remembering how to find a particular reference from the various texts that make up information studies. This example is functionally different as insight focuses on future practices, whereas experience goes back to past processes to help make decisions. The more experience a person has with the texts in the system, the more they essentially use “muscle memory” to find the passage they were looking for in this system (Friedman, 2017).

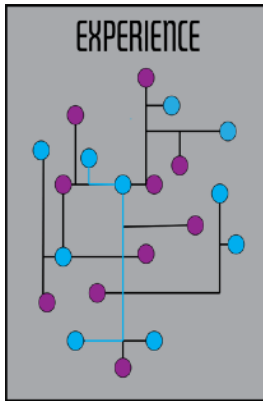


Figure 8 – The Knowledge Graphic with a focus of experience.

The knowledge graphic's blue line represents experience as the person traveling through the network might use that route commonly to walk to three blue dots in one trip. They would learn that route based on multiple trips through the system or by repeating that course daily. This representation of experience might be more physical than one would find in information studies. However, this example still fits the criteria of experience defined above (Webber & Johnston, 2000).

A real-life example of experience is producing a classic family dish without the recipe visually available. This level of memory goes beyond the step-by-step practice of creating the meal.

Rather, a person can recall flashes of past preparations while creating the dish and all of the auxiliary actions that occurred while preparing the meal in the past. This collection of thoughts forms the backstory of the meal and the experiences the chef had to lead to the meal that will be enjoyed today.

2.9. Impact

The final term of the transformational duo (and this primer) is impact. Like insight, impact will deal with the present and the future. Meadow & Yuan (1997) denote that impact is "what happens after a recipient receives and in some manner acts upon information." Impact is less about the foundational trio or the aptitude quartet and more about the actions that occurs once a person or a group of people are exposed to the elements associated with the foundational trio and/or aptitude quartet. There are quantifiable measures in the academy of impact. Google Scholar and other academic-focused organizations quantifies scholars and their works based on citations of individual publications, total number of citations, h-index (where h is the maximum number of h publications that have h citations), i10-index (the number of publications that have 10 or more citations over a given period), the journal impact associated with the scholar's work, and other such metrics. The basic takeaway of impact is examination what happens to a scholar's work after they finish their last edit and it is out of their hands.

Meadow & Yuan's work basically gives the final example for the information studies book paradigm. "One implication is that a book or report sitting on a library shelf or a record in a database is not information to a potential recipient until it is transmitted to and comprehended by the recipient" (699). This extension of the information studies book paradigm present in this quote is built on two core concepts. First is the process of transmission. Transmission requires the information and/or knowledge to be translated into a given medium and accessible to others via a public or semi-public mode communication channel. Second is comprehension, which requires effective communication by the crafter of the information and knowledge. The only way that action can occur in a meaningful way is if there is:

- clarity in the messaging being transmitted,
- it is concise enough that it is easy to process, and
- the audience see a concrete piece of information and/or knowledge embedded in the work.

These three aspects of effective communication (clarity, conciseness, and concreteness) is vital for impactful information and knowledge (Kettinger & Yi, 2010; Liew, 2007; Lanning & Gerrity, 2022; Zheng, Corder, & Spears, 2022). It does not matter how wide information and knowledge is distributed if there is not effective communication of the messaging.

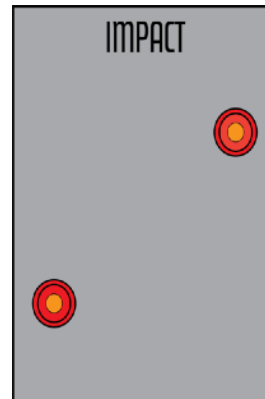


Figure 9 – The Knowledge Graphic with a focus of impact.

The picture to the left shows the impact of the orange dots through the concentric red circles around the orange dots. Those red circles represent the movement of the information after a person receives it and understands how that information will influence them. It models a pebble dropping in water. The waves of action occur after both of the previous criteria occur (distribution and comprehension) within the system (Odziemkowska & McDonnell, 2022).

Impact can be express in the real world by having that wonderful meal created earlier be recommended to others. The recommendation (e.g., spread by word-of-mouth, YouTube video, comment in a social media feed) is the distribution that the meal was a success and it is comprehended by the audience that might enjoy the meal as well.

3. Conclusion

The value of information studies (beyond having a better understanding of how humans turn their observations of the world to lasting, meaningful ideas that are contextually significant) is that people can express these transformations with clarity, conciseness, and concreteness. This primer should help with future conversations of information studies as there is a pedagogical structure that can be referenced, critiqued, and modified (as needed). There was a conscious attempt avoiding the overuse of the foundational trio (thus the need for that phrase within the primer), while building in additional reference points within each of the sections (i.e., the information studies book paradigm, knowledge graphic, and real-world examples). Each of these sections can be examined and critiqued as they are relatively transparent. Jargon was kept to a minimum. Clear language is also vital for the last of the pedagogical requirement. This article must be easy to read for this work to represent a living document. Revisions of any section of this work must be built upon the spirit of concrete ideas expressed with conciseness.

Any document laying out the groundwork for future discussions in information studies must also avoid being too meta, as a cycle of self-referencing monologues often fails to look outward beyond itself. The examples provided within this work was one method of avoiding the meta. The other aspect was avoiding a reflective overtone until the

conclusion to insure the reader could find some outward facing references within the reading. Finally, the references were intentionally selected from multiple disciplines to make it difficult to be too introspective during the course of this article.

In service of the critical review this primer needs, the last question that must be answered is what is the functional use of this work? It was the intent to provide some methods of understanding the nine terms within this article. If information studies is an interdisciplinary pursuit (which is the position I hold), then acknowledging the data reflects the snapshots of reality within a given field of study, information combines data to creating meaning among the noise, and knowledge exists when information becomes situationally relevant in a given context will have value regardless of the program of study one is pursuing in higher education and beyond.

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