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HANDLING KNOWLEDGE AND IDEAS AS PATTERNS: EMPLOY PARADIGMS AS PACKETS FORMING NON- REGULAR INTERLOPING FINITE FRACTAL

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Based on more than two decades of research on the applications of paradigms, I came out with a creativity technique, "Generating New Ideas through Probing Paradigms" as an alternative to brainstorming. As a byproduct of that research, I developed a concept of representing knowledge and ideas in terms of paradigms as patterns within patterns within patterns... - much like a non-regular interloping finite fractal. The creativity technique consisted of the following steps: (a) decide on the subject matter, (b) determine the paradigm, (c) probe the paradigm, (d) map ideas in the mind, and (e) connect ideas to produce new ideas. This needed a basis and framework. The formulation is as follows. A paradigm is a model, map, pattern, etc, and has many definitions. According to Stransfield, a paradigm is a compact representation of reality with less mass and energy. In the brain, the idea or concept in memory corresponds to a particular pattern of activity of a group of connected neurons and synapses. Instead of mapping the paradigm physically on paper, we map it in our mind. A paradigm is like a packet. Spread it out and its components are also paradigms. Spread a component packet and we will find that it also consists of paradigms and so forth and so on. The components of a paradigm are ideas. Some of the ideas may have already been in the mind and only the connections have to be modified. Organized ideas constitute knowledge and represented by paradigms. Within the mind the interconnection can be to any logical paradigm. Thus, we can picture the system as a finite non regular fractal that is interloping. This implies that mathematics and statistics can be applied to knowledge creation, idea generation, and knowledge management. The system can also explain the concept of paradigm shifts.

Keywords: creativity, knowledge, idea, paradigms, fractals

Handling Knowledge and Ideas as Patterns: Employ Paradigms as Packets Forming Non-regular Interloping Finite Fractals

Original idea presented for the first time

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Introduction

In the last two decades the author has been applying paradigms (model, map, theory, explanation, etc.) in his activities. Paradigms, which are sets of ideas, are systematically organized and mapped in one's mind. New idea results when two ideas are connected. The activity is called "probing paradigms to generate ideas". This has been used to formulate strategies and develop innovations. This study is related to knowledge management and can be applied to many fields and areas of study.

Maps and graphical representations of knowledge, ideas, and information are available.



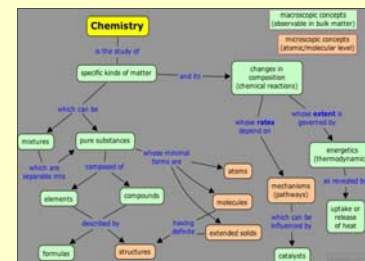
Map of science from click-stream data (1)



A hand-drawn mind map (2)

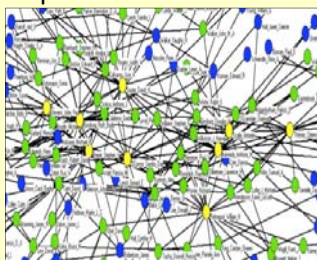


A mind map generated using a software (3)

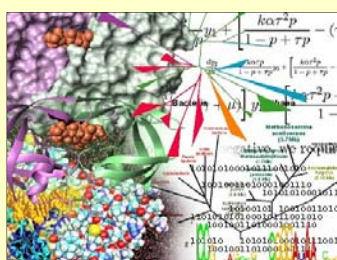


A concept map (4)

Many Fields of Studies are now concerned with handling knowledge, information and data using mathematics, statistics, and computers



Complex systems (5)



Bioinformatics and genomics (6)



Data mining (7)



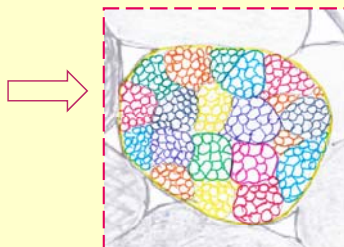
Cloud computing and search engines (8)

A **Paradigm** comprises paradigms each consisting of paradigms and so on and so forth. Paradigm = ideas and knowledge. Probe the paradigm and systematically map it in the brain. Interconnect ideas (from the same level or different levels) to produce new ideas

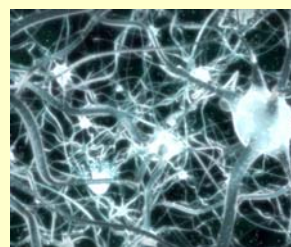


Paradigm as a packet

Total area as a paradigm consists of smaller areas (paradigms also)

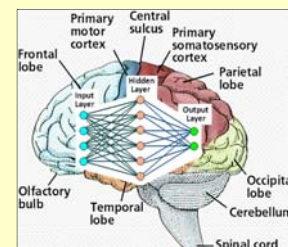


The component areas consists also of areas and so on and so forth = fractal



Mapping in the brain is done with interloping connections.

Figure from (9)



The brain as a neural network computer generates new ideas

Figure from (9)

Probing the paradigms of his discipline and other interests, the author was able to: (10)

- Devise an alternative to brainstorming
- Formulate various strategies
- Develop innovations and inventions
- Introduce new areas of study

This study proposes the application of the technique to knowledge management using mathematics, statistics, and computers in the following areas :

- Genomics, Biodiversity, History, Anthropology, Music
- Economics and Financial Systems,, Globalization
- Effects of Climate Change, Crises Management, Security
- Complex Systems, Chaos Theory, Data Mining, etc.

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