

## A NEW PEER REVIEW STANDARD USING A NO-HIERARCHICAL DIKW PYRAMID

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**ABSTRACT:** *This paper presents a proposal for a new Peer Review Standard using a no-hierarchical DIKW Pyramid -PRS- based on a new and ‘General Cognitive Model of Wisdom’ -GCMW- [1]. This GCMW framework aims -as an insight generator or strategic foresight- to provide a better assessment to different problems in any field of science, from information science, applied researchers or a more general audience as per example, to point out the theoretical and conceptual bases for the interaction between the project manager and this GCMW framework. Based on the GCMW framework, we are proposing a theoretical participatory action research framework based on the PRS aiming at to build a comprehensive and in-depth evaluation of the quality of any scientific production i.e., a standardized proposal for peer review process aiming at paper quality assessment. The PRS framework should provide -for any paper-, a better assessment and insight generator. As we are admitting that any paper published has quality; the proposal is: the quality of this paper is complete if -and only if- the paper has wisdom -W-. Both, the PRS and the new particular DIKW instruments definitions are necessary and sufficient conditions for guaranteeing -guiding- if the paper -which is in evaluation-, has W -wisdom criterion-: The ultimate quality indicator of a paper.*

**KEYWORDS:** No-Hierarchical DIKW Pyramid, Cognitive Models, Decision Making, Scientific Publication Evaluation, Wisdom Quality Indicator

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### INTRODUCTION

This is a theoretical research paper proposal to standardize paper evaluation through a new “Peer Review Standard using no-Hierarchical DIKW Pyramid –the PRS”. The PRS is a participatory action research framework aiming at to build a comprehensive and in-depth evaluation of the quality of any scientific production i.e., a standardized proposal for peer review process aiming at paper quality assessment. The PRS framework should provide -for any paper-, a better assessment and insight generator. As we are admitting that any paper published has quality so; the proposal is, the quality of this paper is complete if -and only if- the paper has wisdom -W-: the W criterion as an ultimate quality indicator.

In this paper, we are enlarging the conception of the Particular Cognitive Model of Wisdom –PCMW- [1], towards a more focused and a general title: **a participatory action research framework based on the PRS**: “a process of uncovering solutions through progressive problem solving aiming at to improve practices and address issues. The process involves investigation through activity [such as a paper review], rather than theoretical response”. This paper addresses the framework PRS as an ultimate, comprehensive and in-depth evaluation of the quality of any scientific production based on the wisdom criterion –fig. 2-. It is important to make it clear the PRS Model is a theoretical tool proposed to analyse if scientific papers deliver what we expected from them or if these publications only allow the scientist to discharge himself from the tasks imposed by a pragmatic orientation, without greater commitments with the W, in order to meet the interests from the institutions. This is a

proposal for a **theoretical research paper** regarding the model **PRS** and, “surely, just as in any model of social or even technical (physics, chemistry, and biology) sciences is a simplification of reality, but thanks to the modelling of reality we are able to inquire into its essence better”. (Targowski 2.a). The point is, as all model may evolve so, for futures works –as an driving possible practical example for a validation process-, a corpus of N papers should be studied and analysed - statistical comparison of various published papers- aiming to measure how many of these published articles meet -adequacy- the guidelines proposed by the fig. 2.

Finally, in regarding to participatory action research framework based on the no-hierarchical **PRS** model creation -fig. 2-, the next paragraph express the motivation -the justification-, about:

The new peer review standard using a no-hierarchical DIKW pyramid –PRS- is justified by the need to build more frequent, comprehensive and in-depth evaluations about any scientific production. ‘Fortier, Doiron, Burton and Raina’ [3], to discuss how to obtain quality and applicability to harmonize the consolidation of the avalanche of D and ‘I’ in the area of epidemiology, propose the standardization of metrics and procedures and a more flexible harmonization approach:

This requires the scientific community -or partner studies fostering data synthesis- to agree on a common set of measures and use identical information collection tools and procedures to collect and generate data in each study. (Fortier et al [3]).

The proposition of Fortier and colleagues demonstrates the concern showed in several areas of K regarding the need of a directive for the academic research and filtering of D. Yet, we are not presenting in this paper any validation model results. As a theoretical proposal for a participatory action research framework based on the PRS model -figure 2- we are proposing a model which could be validated by the interested reader of this paper and, for that, in the second paragraph of section 4 –Final Contributions- we present one way for the validation process. Others validations process could be presented or discovered by the interested readers from this paper aiming to further advance in the proposal presented here. In the fifth paragraph from section 4 –Final Conclusions- we present advance reasoning in regarding the PRS model evolution.

The process of measuring the reach of an academic production or a scientific action through indicators of performance is controversial when it is univocal. Brisolla [4], a researcher who participated in a pioneering FAPESP initiative regarding the production of detailed indicators aiming at to subsidize the public policies in the sector for the San Paulo State, revealed the ‘philosophical problem’ faced at that time:

Will be possible to construct indicators that express, with some level of reliability, the reality these indicators are supposed to represent? i.e.: how can be possible to establish cause-and-effect relationship -CER- between a scientific and technological activity and the socioeconomic impact it causes? Are there indicators that can give account of this process? [4]- And quoted Cozzens<sup>1</sup>:

There are some threats that one must avoid when making assessment studies. The first is regarding to the temptation to manage the policy of a research financial support on the basis of a pre-established socio-economics objectives, when the management of the resources for a

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<sup>1</sup> Cozzens, S. (1995). Assessing fundamental research: ten ways to get it wrong. *Simpósio Farmacêutico de Smithkline Beecham*.

financial support of a research should be evaluated as such, by its own goals i.e., by the research objectives.

In this paper, we proposed Wisdom to be the ultimate quality indicator of a research. Our PRS is a cybernetic model that can serve as a foundation for those metrics mentioned by Cozzens which could be developed in further research.

Brisolla also alleged that:

It is very difficult to directly measure the socio-economic outcomes from a research system and, so, to be able to assess this economic effectiveness from this research system it is necessary to check how much of the desired result directly aimed by research has been reached, such as: by human resources training, scientific publication and patents creation. [4].

The sections included in this paper are:

Section 2: 'Theoretical Foundation', which is the conceptual basis for GCMW framework - the interrelationship proposed among the cognitive units DIKW [1].

Section 3: 'Methodology: The Cognitive Method' which introduces the new peer review standard using a no-hierarchical DIKW pyramid -The PRS Model- & the new set of logical definitions for 'DIKW' to instrumentalize the model towards paper quality assessment.

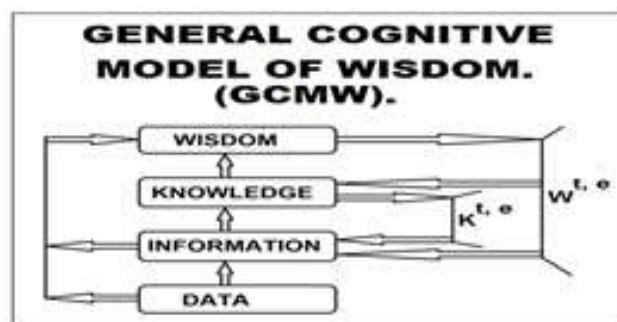
Section 4: 'Research Perspectives and Expected Contributions'.

Section 5: 'References'.

## **THEORETICAL FOUNDATIONS FOR THE NEW PEER REVIEW STANDARD – PRS- USING A NO-HIERARCHICAL DIKW PYRAMID.**

### **The General Cognitive Model of Wisdom -GCMW- [1]**

Reference [1] presents all corollaries needed to develop the model CGMW, fig. 1.



**Figure 1. The interdisciplinary and integrated approach for the no-hierarchical GCMW Framework. The networks of interactions in the Information Ecosystem are intertwined and interdependent regarding the achievement of W [1]. The cognitive units  $K_t$ ,  $K_e$ ,  $W_t$ ,  $W_e$  are, respectfully, the tacit Knowledge; explicit Knowledge; tacit Wisdom, and Explicit Wisdom, Source: [1].**

The fig. 1 is a graphical analogous model to assist a decision-making process in a project management through the simulations of ‘what if’ scenarios. This GCMW is proposed to act as ‘insight generator or strategic foresight’ towards scientific discoveries, projects writings or improvement of the objectives and public policies, and, consequently, improving the ROI to the society. An ‘step by step’ analyses from the fig. 1, the news arguments regarding the interdependent and intertwined character of the logical cognitive unites  $DIK_{t,e}W_{t,e}$  as well the concerns regarding the Cause-effect relationship & Wisdom Engine are presented in [1]. In this paper, we are concerned to the new peer review standard using DIKW pyramid.

## METHODOLOGY

### The Cognitive Method: The New Peer Review Standard using a No-Hierarchical DIKW Pyramid –The PRS Model-

The current practice of information science regarding paper quality evaluation has made use of only two -linear- traditional cognition units [05] data -D- and Information -I-. In this theoretical research paper, we propose to work with more two-cognition units -KW-, to instrumentalize the wisdom theory towards the new peer review standard -paper quality evaluation-, using a no-hierarchical DIKW pyramid.

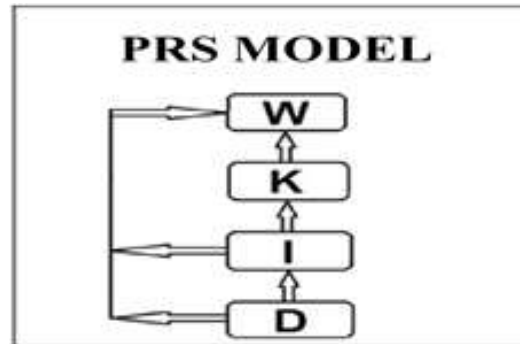
We call this approach as **Cognitive Method -CM-**, i.e., according to the American Heritage® Stedman's Medical Dictionary, “cognitive is characterized by, involving, or relating to cognition” (Cognitive [6]). By quoting and adapting the cognition definition from The American Heritage® Science Dictionary “cognition is the mental process of knowing, including perception, reasoning, and judgment [that lead to the awareness or consciousness of the ‘world around us’] [...]”. (Cognition [7]). We may specify the term ‘world around us’ as being the content of any scientific publication in evaluation. Therefore, CM means the understanding of the content of this paper based on the assumptions of the **PRS**, the new peer review standard using a no hierarchical DIKW pyramid.

### The PRS model

In the PRS model -fig. 2- we are not considering the intertwined and interdependent character of the Information Ecosystem, as presented in fig. 1. Therefore, the conceptions of  $K_{t,e}$  and  $W_{t,e}$  -as described in the fig. 1- are irrelevant regarding the methodology towards paper quality evaluation -the new peer review standard using a no-hierarchical DIKW pyramid, The PRS Model-. The fig. 2 presents the final no-hierarchical PRS:

In the fig. 2 the character tacit & explicit -presented in the GCMW, fig. 1 is now irrelevant, and not showed. In spite of we are considering DIKW in the fig. 2 we could -indeed- have considered  $DIK_eW_e$  as showed in fig. 1. Our reasoning: considering we are admitting that all paper published has quality (the section 3.4 presents a further discussion about quality of information) so, it is our proposal the quality of a paper is complete if -and only if- it has explicit W i.e., We must be clearly manifested in the text being read. However, when reading a paper we may identify it has tacit W i.e.,  $W_t$  may only be perceived from the underlines of the text being read -is part of human mind- [1]. On the other hand, when reading a paper with the intention of quality evaluation -objective analyses-, the goal is not to find  $W_t$  i.e., in the context of a paper with “complete quality”, the W, which should exist in the paper -if any- must be  $W_e$ . In short: when reading a paper we want to discover if this paper has  $W_e$ . This is why we have considered DIKW -and not  $DIK_eW_e$ - in the fig. 1. Anyhow, the reader of this research paper might consider the  $DIK_eW_e$  in the fig. 1 without of any prejudice -is

irrelevant- to the reasoning adopted regarding the proposed **PRS** model as the new peer review standard -paper quality evaluation-, using DIKW pyramid, fig. 2. Finally, if the paper evaluated has also Wt; that is very significant! As presented in [1], Wt,e may become Kt,e i.e., "the notion of W starts with the construct of Kt about oneself, others, and situational contexts"; and, according to our reasoning, the above 'situational context' is the external or internal 'Situational **H**uman **B**eing **C**ontexts' -**SHBCo** [1].



**Figure 2.** The PRS Model is a tool proposed to analyse if scientific papers deliver what we expected from them or if these publications only allow the scientist to discharge himself from the tasks imposed by a pragmatic orientation, without greater commitments with the W, in order to meet the interests from the institutions. The character -tacit & explicit- presented in the fig. 1, are now irrelevant in the fig. 2.

According to the authors, when there is the existence of underlined W in the paper -the Wt-, it is in such situation that may occur the triggering for new scientific accomplishments or discoveries. This may be understood by considering that our internal SHBCo is non-obvious i.e., Wt may be transformed either in Ke as Kt. This 'internal SHBCo' is the context in which the **H**uman **B**eing **C**ognition -**HBC**- is exposed! "Scientia potentia est" -Knowledge is power. From Wikipedia-, see Section 3, about Cognition Method-. In short, this internal SHBCo is non-obvious i.e., it is possible one to find Wt where others are not able to. To instrumentalize the **PRS** Model -fig. 2- an integrated set of logical definitions for the no-hierarchical instruments DIKW is proposed i.e., to find out if a paper has W -or not- a clear and logical definition for W is needed. As such, this definition for W must consider an integrated view of all instruments -DIKW- from fig. 2. In short, both, the **PRS** and the new particular and integrated set of logical definitions for the instruments DIKW', are necessary and sufficient conditions for guaranteeing if the paper being evaluated has W.

**D:** "is a measuring CU", (Targowski [2]) "that describes information of raw facts", (Case [8]). It is not a function of context and it is not a pragmatic unit since it involves only measurements. According to 'Bellinger, Castro, and Mills'[9], "when moving from data to information involves understanding context". D may trigger the W -"...vision & foresight..."-, as already discussed in the section II, from reference [1].

**I:** "is a comparative [and pragmatic] CU [...]" (Targowski [2]), "which is meaningful and useful to human being" (Laudon [10]) "in a specific context" (Case [8]). According to 'Bellinger, Castro, and Mills' [9], "when moving from information to knowledge involves understanding patterns". 'I' also may trigger the W in a specific context -as already discussed in the section II, from reference [1].



**K:** “is a reasoning [and pragmatic] CU [...]” (Targowski [2]) created by applying human experience on available ‘I’ -the internal HB context applied on the available ‘I’-. “As an internal human being process” (Case [8]), it is a guide for action, i.e., according to ‘Bellinger, Castro, and Mills’ [9], “when moving from knowledge to wisdom involves understanding [Concept - C- and] principles [...]”. Concept -C- is a keyword, which represents the reasoning encompassing the K -not by taking into account what we know and rather, by the manner we make use of this K. This reasoning requires to take into consideration the coupling of K with a mind-set -“the ideas and attitudes with which a person [envisions to deal with] a situation. [...]”-. This mind-set comes from the **philosophical wisdom** -W- definition proposed by the authors [1]:

Wisdom –W- is the capacity to put in action an acquired knowledge. This action implies in correct judgment and requires the understanding of the coupling of knowledge with the following principles ‘Competence, Prudence and Imagination’ -CpPI-, before an ultimate action towards a decision-making. (Source: paper authors, [1]).

Therefore, the mind-set have embedded these principles: **CpPI**. The coupling of K with the mind-set -CpPI - must be considered before presenting a set -when possible a set- of possible solutions regarding a decision making towards W.

**W:** “Pragmatic cognitive [and context dependent] unit [which is] not found in knowledge [...]”. (Targowski [2]). In spite of K delivers all you need for a final action, it is in the W where the ultimate action effectively occurs: the capacity to put in action an acquired K (see C definition above). As already mentioned, this action implies in correct judgment and requires the understanding of the coupling of K with the principles CpPI -the mind-set- before an ultimate action towards a decision-making.

### **C AND CPPI. The Mind-Set: A Correlation with W.**

By quoting and adapting Esaki [11, 12 (a,b) and [13] we have: “the method for creating [or finding] wisdom from knowledge is a mechanism that has been carried out in our unconsciousness throughout our life [and], in order to create [or find] wisdom, it is only necessary to have [an established mind-set]. Therefore, although knowledge develops into wisdom, only with [an established mind-set], we may rearranged knowledge into wisdom and, a wisdom action taken. [In short:] wisdom may be [found] or created if you have a mind-set [...]”. (Esaki [11, 12 (a,b) and [13]).

The accomplishment of The Mind-set is get by defining a keyword, which, according with Esaki [10, 11], the definition of this keyword is a condition for the W attainment becomes feasible. Therefore, the keyword we have proposed for W finding or creation is the keyword concept -C- defined within the instrument K -section 3.1-. From the point of view of Esaki [11, 12], for completing this C definition we must add the ‘three principles’ -CpPI- which constitute our mind-set to find or create W [1].

Besides the introductory definition of imagination -see CpPI-, Einstein [14] -as far as this research point out-, was the first to present some kind of correlation involving K and imagination, i.e., “Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world” [14] -. As explained in the next paragraph, imagination is an important guide towards wise –W- decision-making: Imagination is ‘one of the principles’ needed in this new peer review standard using DIKW pyramid.

Davies [15], presents imagination “as synonymous with creativity” and “the ability to create and experience virtual situations in the mind that are independent of sensory input”. He describes about “imagination towards possible futures and wrote that imagining possible futures might have been key to the success of our species”. He grouped imagination into two elements: ‘has sensory and has not sensory elements’ and, labelled both as ‘Mental modelling’ i.e., “the study of the working internal representations people have and create to understand systems such as [the **PRS Model** with] important implications for educational, interface design [and paper quality evaluations]. [...]”. (Davies [15]). Imagination is an important instrument in a final decision making towards W.

By last, by quoting and adapting Faucher [16] we may construct an explanation which strengthen the concept ‘understanding’ used in the definitions of the instruments DIK -see section 3.1-, i.e.: “understanding is the power that generates new links -transformational relationship- among DIK to create a high level outcome -W-. Information can resonate with K and lead to the creation of W. K can interact with ‘I’ and create a new ‘I’, K or W. For any of these transformations, W requires a higher level of understanding than DIK [i.e., requires the application of the mind-set CpPI]. [...]”. The fig. 2 represents the transformational relationship proposed by Faucher [16]. Next, we present the challenges faced regarding the application of the proposed methodology PRS -fig. 2- towards paper quality evaluation.

### **Challenges to be Overcome for Implementation of the PRS Model –The New Peer Review Standard Using Non-Hierarchical DIKW Pyramid**

The biggest challenge we face is to measure W for the purpose we are looking at i.e., “Proposal for the evaluation of the quality of a paper based on the new peer review standard using non-hierarchical DIKW pyramid –PRS Model & its new logical particular definitions for the instruments DIKW”. When reading a paper, the reader must have a background on the subject being evaluated in order to guarantee a minimum of reasoning similarity for each field of science -and its specific branch- into consideration for evaluation. For example, if the paper evaluated is about genetics, the reader must have a background in genetics to guarantee an unbiased conclusion in the process of evaluation.

The reader must also read the content of the paper strictly within the paper context -i.e., the paper reading must be limited between its abstract and its conclusions, final considerations or perspectives-. At the same time, the reader must consider the new peer review standard using non-hierarchical DIKW pyramid -PRS & instruments DIKW-, and, in this context, the reader must look for the existence of W -quality evaluation. Contextual background is essential to the correct assessment of the paper and, consequently, the validation process of the PRS -i.e., the process of determining the degree to which the model PRS is an accurate representation of the real world in the perspective proposed in this research paper.

Regarding the validation note that, this is a theoretical research paper, so –as an driving possible practical example-, a corpus of N papers should be studied and analysed - statistical comparison of various published papers- aiming to measure how many of these published articles meet -adequacy- the guidelines proposed by the fig. 2.

## THE QUALITY OF INFORMATION & PAPER EVALUATION

### Challenges to be Overcome for Implementation of the PRS Model –The New Peer Review Standard Using Non-Hierarchical DIKW Pyramid

The Moore's Law predicts -indirectly- an exponential decreasing in the IT costs, and -consequently- the access to new technologies has been increasingly available for all. This permanent technological evolution has reduced the 'I' storage costs and has made possible for the computer to deal effectively with the issue of volume and control of 'I'. (Balloni and Targowski) [17].

According to Barreto [18], once resolved the above managerial concern regarding the stock of 'I', the focus should be directed to the quality of the 'I' being delivered and, in according to 'Bornmann and Leydesdorff' [19], "there is no standard for the validation of counts of papers and citations as they relate to quality".

Concerned with these issues, the following two questions arise:

1. What is 'I' quality?
2. Is there a W criterion regarding the quality evaluation of the content of a paper?

1. The first questioning. According to Case [8], 'I' quality is "the perceived attributes of information that make it of value to a potential user in a specific context. Some components of quality include relevance, timeliness, accuracy, specificity, comprehensiveness, and authoritativeness"

On the other hand, the Council of Canadian Academies 2012, apud 'Bornmann and Leydesdorff' [19], presents the idea that "...quality is a multidimensional phenomenon... Research quality is a complex, multidimensional attribute that takes into account various factors such as originality, rigor, and scientific impact..." For this research paper proposal, we are admitting all paper published has the quality as defined above. For the authors of this paper, the quality of any paper is complete only if this paper has also W.

2. The second questioning. According to Seglen [20] "Science deserves to be judged by its contents" and, in according to 'Bornmann and Leydesdorff' [19] "there is not a standard for the validation of citation counts in terms of their correlation with quality [i.e., the paper content, as above, by Seglen [20]: science deserves to be judged by its contents]. There is no standard for the validation of counts of papers and citations as they relate to quality. [...]"

We may infer from above that the process for paper quality assessment is still required and this requisite is aligned with the fig. 2 presented in the section 3.1. Particularly, the W instrument defined in the section 3.1 could also be a parameter for quality assessment of news scientific publications, i.e., the 'W criterion' or an 'ultimate W quality indicator' rated by peer judgments.

This proposal -W as ultimate quality indicator- originated from 'Bornmann and Leydesdorff' [19] ideas regarding the study about which the following indicators have had more influence in a paper citation: quality indicators (peer review), journal impact factor, numbers of authors and number of pages of the paper? We believe the 'W criterion as ultimate quality indicator' could increase a paper citation regarding peer review. Yet, in according to 'Bornmann and Leydesdorff' [19], "there is not yet a standard for the validation of citation counts in terms of their correlation with quality: There is no standard for the validation of counts of papers and



citations as they relate to quality”. Therefore, the proposal from the authors of this paper of ‘W criterion’ could provide a new standard for a paper quality assessment, creating a new validation process for paper citation i.e., a paper submitted for publication -besides all consideration of quality- also has W -the ultimate impact for quality-.

### Final Contributions

The proposal of a new peer review standard using non-hierarchical DIKW pyramid -The **PRS Model**-, may bring enlightenment in the discussion regarding policies for scientific research. The policies implications are concerned to the evaluation if a paper already published has delivered what we expected from it or, if this publication only has allowed the scientist to discharge himself from the tasks imposed by a pragmatic orientation in order to meet the interests from the institutions.

As a theoretical proposal for a participatory action research framework based on the PRS, this paper addressed the framework **PRS** as an ultimate, comprehensive and in-depth evaluation of the quality of any scientific production based on the wisdom criterion -fig. 2-. As an open proposal for future work -to whom it may concern-, a corpus of N papers should be studied and analysed -to perform statistical comparison - aiming at to measure how many of these published articles meet -adequacy- the guidelines proposed by the fig. 2. As presented, contextual background is essential for the correct validation process of the **PRS Model**.

Another proposal for future work is regarding the Human Being Cognition -HBC-. Since there is a lack of rules that govern the cognitive processes -the most important achievement of the HB, the HBC-, we propose to present The Framework -fig. 2-, to the new researchers aiming to instigate improvements as well the incorporation of news practices, concepts and methods in their research program based on assumptions of these W theories. We believe these models could contribute to the development of the theory of information and for the improvement of the Cognition Process -CP- (**CP explained next**). The possibility of a never-ending cycle of stimulus in the HBC due to the intertwined character of DIKW, which is constant interaction with Information Technology -IT- (**IT is explained next**) & the internal Situational Human Being Context -SHBCo-, as presented in the section 3.1. It is in this network of interactions in which may occur the triggering for new scientific accomplishments or discoveries.

- **IT:** because as stated by Schaller [21]: “Moore’s Law is a metaphor for technological progress on a broader scale, with broad applications and pervasive technological, economic, and social changes that continue to come”.
- **CP:** the improvement of the Cognition Process. According to ‘Roco and Bainbridge’ [22] “cognition cannot be understood without attention also to the interaction of the individual with the environment, including the ambient culture [-this is also the mean for the term ‘world around us’ inserted in the cognition definition, at section 3-]. [...]” so, for the HBC do not degenerate -due to the continuous development of technical skill- it is need, also, to continuously increase the Human Been Cognition -HBC- towards love, arts, aesthetic, passion and enthusiasm -socio skill of HB- aiming an equilibrium of the HBC development

By last, we are admitting all paper published has the quality as defined in the section 3.4 i.e., the quality of any paper published is complete only if this paper has also W. Therefore, for a paper submitted for publication, the instrument W could also be a new W criterion -ultimate quality indicator- aiming also the increase of paper citation. The reasoning about this

theoretical research paper turns around its original model proposition: The PRS model, figure 2. The proposal is that the reader of this theoretical research paper may develop new insights or feelings when reading any paper. These insights and feelings aim to provide a better assessment towards W: the W criterion –The ultimate quality indicator.-see section 3.4-

### **Future Research Work**

Finally, we are not presenting in this paper any validation model results. As a theoretical paper proposal based on the **PRS** model -figure 2- we are proposing the following validation process: a corpus of N papers should be studied and analysed -to perform statistical comparison- aiming at to measure how many of these published articles meet -adequacy-, the guidelines proposed in this paper, figure 2. Others validations process could be presented or discovered by the interested readers from this paper aiming to further advance in the proposal presented here.

Our argument is “Surely, just as in any model of social or even technical (physics, chemistry, and biology) sciences is a simplification of reality, but thanks to the modelling of reality we are able to inquire into its essence better”. (Targowski 2.a). The point: all models may evolve! Take as example the timeline for the atomic models [1]:

“• 2400 years ago: Democritus named the smallest piece of matter as “atoms”, meaning, “not to be cut”.

• 1803: Dalton presents his model, which led to acceptance of idea of atoms. • 1897: Thomson’s Plum Pudding Model, provided the first hint that an atom is made of even smaller particles.

• 1908: Rutherford Model of a nucleus and electrons.

• 1913: Bohr Planetary Model, electrons move in definite orbits around the nucleus, much like planets circle the sun. • 1924: Louis de Broglie Quantum Model, developed the theory that particles have wave properties. • 1932: James Chadwick, discovered the neutron.

• 1966: Lise Meitner, discovered nuclear fission. • “The Cloud Model, which is now in force, has been developed by a number of authors since the 1950s”. (Targowski 2.a).

By the same line of reasoning, we hope our PRS Framework presented in this theoretical research paper -represented by the figure 2-, along with its new logical definitions for the instruments DIKW could pass through similar unfolding. “[1].

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To my work place CTI Renato Archer for so many things to be described here.

### **REFERENCES**

[1] Author (2017)

[2] Targowski, A. a) - (2013). *Harnessing the Power of Wisdom from Data to Wisdom*.

Hauppauge, NY: Nova Science Publishers. <<http://goo.gl/Qbg5tl>>, retrieved Jan 13,

2018. b) - (2009). *Information Technology and Societal Development*. IGI Publishing

Hershey, PA Hershey Publisher

- [3] Fortier, I., Doiron, D., Burton, P., & Raina, P. (2011). Invited commentary: Consolidating Data Harmonization - How to Obtain Quality and Applicability? *American journal of epidemiology*, 174(3), 261-264. <<https://doi.org/10.1093/aje/kwr194>>, retrieved Jan 17, 2018.
- [4] Brisolla, S. N. (1998). Indicadores Para Apoio a Tomada De Decisão. *Ciência da Informação*, 27(2), 221-225. <<http://goo.gl/Rw4pXk>>, retrieved Jan 13, 2018
- [5] Wertheimer, L. (1958). *Cognitive Units, Complexity, And The Formation Of Concepts* (Order No. 0214953). Available from ProQuest Dissertations & Theses Full Text; ProQuest Dissertations & Theses Global. (301905167) <restrict access>.
- [6] Cognitive. (n.d.). *The American Heritage® Stedman's Medical Dictionary*. <<http://goo.gl/tsJbo>>, retrieved Jan 13, 2018
- [7] Cognition. (n.d.). *The American Heritage® Science Dictionary*. <<http://goo.gl/RQZ3d>>, retrieved March 20, 2018
- [8] Case, D. O. (Ed.). (2012). Looking For Information: A Survey Of Research On Information Seeking, Needs And Behavior. Emerald Group Publishing.
- [9] Bellinger, Castro, and Mills (2004). Bellinger, G.; Castro, D.; Mills, A. *Data, Information, Knowledge, and Wisdom*. 2004. Retrieved from <http://goo.gl/f1Fp>
- [10] Laudon (2012). Laudon, Kenneth C.; Laudon, Jane P (2012 *MANAGEMENT INFORMATION SYSTEM: MANAGING THE DIGITAL FIRM*. 12. Ed. New Jersey, USA: Pearson Prentice Hall™. p. 13-420.
- [11] Esaki, M. (2009). Method for creating Wisdom from Knowledge-Wisdom Management - For Task Realization and Problem Solving. Retrieved from <http://goo.gl/AmBPZF>
- [12] Esaki, M. (2013): a) - Method For Creating Wisdom From Knowledge-Wisdom Management. *R Methodology*. Retrieved from <http://goo.gl/20bP4o>  
b) - Method For Creating Wisdom From Knowledge. *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*, 1267-1272. Retrieved from <http://goo.gl/aC1Hni>
- [13] Esaki, M. (2008). Method for Creating Wisdom from Knowledge- For Task Realization. <<http://goo.gl/hL00bW>>, retrieved March 18, 2015.
- [14] Einstein (1929). "Imagination is More Important than Knowledge. Knowledge is Limited; Imagination Encircles the World". *The Saturday Evening Post*-. Indianapolis: George Sylvester Viereck, October 26, 1929. Retrieved from <http://goo.gl/VfmwY>
- [15] Davies, J. (2013). Imagination. In *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship* (pp. 899-902). Springer New York. Retrieved from <http://goo.gl/UBDSSy>
- [16] Faucher, J. B. (2010). *Reconceptualizing Knowledge Management: Knowledge, Social Energy, And Emergent Leadership in Social Complex Adaptive Systems* (Doctoral dissertation, University of Otago). Retrieved from <http://goo.gl/6Ie3aD>
- [17] Balloni, A.J. & Targowski, A. S. (2015). Challenges and Reflections on Information, Knowledge, And Wisdom Societies And Sociotechnical Systems". In: Darshana Sедера; Norbert Gronau; Mary Sumner. *Enterprise Systems. Strategic, Organizational, and Technological Dimensions*. Chapter 14. Pages 1-22, LNBIP, Vol. 198. Springer Switzerland.
- [18] Barreto, A. D. A. (2002). A Condição Da Informação. *São Paulo Em Perspectiva*, 16(3), 67-74. Retrieved from <http://goo.gl/14ZPvj>
- [19] Bornmann, Lutz; Leydesdorff, Loet (2014): Does Quality Matter for Citedness? A comparison with para-textual factors and over time. Retrieved from <http://goo.gl/sAhhH1>
- [20] Seglen, P. O. (1994). Causal Relationship between Article citedness And Journal Impact. *Journal of the American Society for Information Science*, 45(1), 1-11.

- [21] Schaller, R. R. (1997). Moore's Law: Past, Present and Future. *Spectrum, IEEE*, 34(6), 52-59.
- [22] Roco, M. C., & Bainbridge, W. S. (2003). *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science*. Kluwer Academic Publishers