

LICAC AIE, a Common-sense Approach to Qualitative Methodology

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Abstract

This article explores a classical method called LICAC AIE. It has been used in teaching, in student research as well as in problem solving within the public sector. It is composed of two acronyms. The analytical core, LICAC, stands for Localisation, Identification, Comparison, Analysis and Conformity with reality. The operational core, AIE, stands for Acceptance, Implementation and Evaluation.

The method is conceived in 1983 and draws upon longitudinal research on Ibn Khaldūn. It is lately configured and computerized in a battery of questions that suit brainstorming and gives opportunities to explore methodological and didactical ideas.

When using LICAC AIE, the researcher is supposed to start with the object of analysis, localize it, identify it, analyse it and compare it. This differentiation between methodological concepts draws upon the experiences and theories of the researcher.

Further reflexive support comes from helping devices as the SWOT-methodology and the PEAK-methodology that consolidate cognitive association. The success of the methodological process depends on feeling of empowerment. Conclusions reached should further be developed in contact with reality. The objective of this article, the comparative view and the research questions proposed are on how to operationalize LICAC AIE, in particular the analytical core LICAC.

Keywords: The-thing-in-itself; The-thing-into-its-context; Reflexivity; Constructivism/Ibnūn; LICACAIE; PEAK; SEGD

Introduction and Background

Comparison has followed us since early times. The discovery of writing complimented our ability to sketch drawings as well as our ability to talk. It fortified comparison, also as a methodological tool, and proliferated our literary composition. Under the title, "*The purposes that must be kept in mind in literary composition and that alone are to be considered valid*", Ibn Khaldūn says that written communication gives information about science and knowledge, the noblest part of thinking, handed down among nations and generations. He then enumerates seven purposes behind literary composition.

These are: the invention of a science, or problems and topics of research (a factor of power). Then comes the interpretation effort, followed by the discovery and correction of mistakes in written materials (factors of earnings). In the fourth place comes the supply of lacking problems in a discipline, followed by the arrangement and improvement of problems, putting every problem in the chapter where it belongs (factors of activity and action). In the sixth place comes the collection of the scattered problems in a discipline, to create a subject in its own right, followed by the composition of brief and succinct abridgement, omitting repetitions (factors of knowledge). These seven purposes stand here as variables of Power, Earnings, Activities and Knowledge, the PEAK-paradigm [1,2].

Satisfying such intentions, when writing, implies comparison, both qualitative and quantitative, however quantity is often dependent on quality. Sensationalism, the ease when mentioning higher numbers, and the disregard of reviewers and critics, affect quantitative approaches. In addition, says to Ibn Khaldun failure to exercise self-criticism and moderation, and failure to reapply oneself to study and research could lead to less persuasive results. Quantitative and qualitative methodological approaches are therefore inseparable. LICAC AIE is overwhelmed qualitative.

The objective of this article, the comparative view and the proposed research questions deals with how to operationalize LICAC AIE. As

previously mentioned, the letters stand for: Localization, Identification, Comparison, Analysis and Conformity with reality. Acceptance, Implementation and Evaluation follow thereafter.

However, before any methodological endeavour, one has first to reveal the ground principles or the attributes that underline one's object of analysis. This is the task of identification (What is the thing in itself?) and that of contextualization (Where does the thing manifest itself?).

Objective

The overall objective of this article is to distinguish and discuss the sequential steps of LICAC AIE, using reflexive thinking and self-organization of ideas [3].

The discussion draws upon a longitudinal study of Ibn Khaldūn's work, taking into consideration the seven purposes regarding writing, in particular the scheme of interpretation and that of collection of scattered thoughts. LICAC AIE is compared to similar methods by the end of the article.

Comparative view

Comparisons with modern and classical methodological sources as well as interpretation are the chosen approaches to LICAC AIE. Theories of thinking and didactical domains of knowledge function as a background.

Constructivists maintain that knowledge and truth do not exist in the outside world as such, but are actively constructed by the individual

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from her experiences [4]. As summarised in their concept of REAL (Rich Environment for Active Learning), constructivist maintain that the proper learning environment for a student is characterised by (a) responsibility and initiative; (b) generative learning strategies; c) authentic learning contexts; (d) authentic assessment and (e) co-operative support.

These approaches imply that one has localized and identified one’s object of analysis and constructed a background for speculation and for active use of one’s mind. They also imply that one has experienced working with qualitative methods, as summarized in the acronym REAL above. Under the title «How to teach and how to learn: didactics», Breuer and Schreier say that «The teaching of qualitative methods cannot do without an - implicit or explicit - theory of how knowledge about qualitative... research is learnt» [5].

Educational psychologists headed by Bloom classified in 1956 different types of acquirement in a taxonomy showing three overlapping categories of learning: cognitive, affective and psychomotor [6]. The cognitive domain concerns mental skills (Knowledge) and includes six levels, each leading to a higher one: knowledge, comprehension, application, analysis, synthesis and evaluation. The cognitive domain could compose a background for Ibn Khaldūn seven purposes for writing — from invention to omitting repetitions — previously described as variables of power, earnings, activities and knowledge. The affective domain deals with feelings or emotional areas (Attitudes). The psychomotor domain deals with physical skills. These three domains and their sub-divisions are meant to help in planning progressive strategies on how to learn qualitative methods.

Bloom, similarly to Ibn Khaldūn from the 14th century, gives question cues and didactical hints to the teacher and to the student on

how to exploit one’s cognitive powers in learning knowledge, attitudes and skills as will be explained later [7].

Figure 1 summarizes the above ideas from constructionists, the acronym REAL (Rich Environment for Active Learning), Bloom’s taxonomy to explain how to acquire knowledge about qualitative research. The table gives reflections and interpretations, combining the phases in LICAC AIE with Ibn Khaldūn three theories of thinking (the discerning, the experimental and the speculative intellect) and his three didactical phases (acquirement, improvement and mastery of knowledge). Some of Bloom’s question cues from the three categories of learning (cognitive, affective and psychomotor) are used to operationalize these theories of thinking and didactical phases. However, this article draws mainly upon Ibn Khaldūn’s ideas because of his explicit dichotomous definition of the object of analysis (the thing-in-itself and the thing-in-its-context), his three theories of thinking and his other methodological endeavours, wherefrom LICAC AIE is deduced. In other words, this article builds on deductions, collections and interpretations of methodological scripts mainly from one source, the Muqaddimah, the monumental work of Ibn Khaldūn. Methodological learning from other authors will be mentioned where they appear in the text.

Research question

How methodologically important is it to differentiate between «the thing-in-itself» and «the thing in-its context», and what types of media or paradigms, apart from thinking, could reveal the attributes of the thing in-itself and those of the context, before and after contextual transformation?

To answer such questions, this paper has the following structure: Firstly, it highlights Ibn Khaldūn dichotomous definition and his

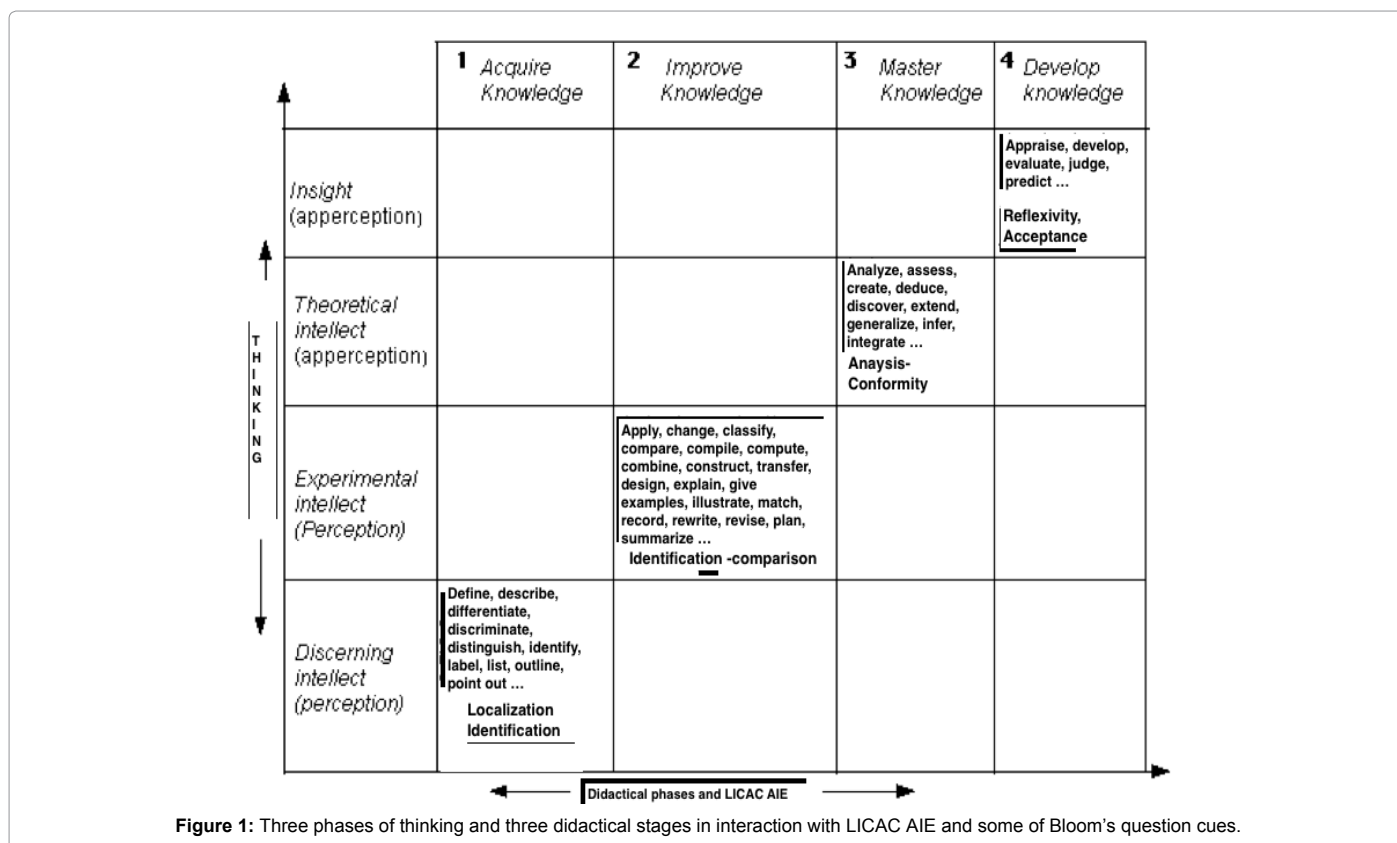


Figure 1: Three phases of thinking and three didactical stages in interaction with LICAC AIE and some of Bloom’s question cues.

theories of thinking. Secondly, it details the eight phases of LICAC AIE using associative thinking. Thirdly, it exposes Ibn Khaldūn’s three progressive didactical phases. Reflexive thinking and the discussion of LICAC AIE throughout the article should answer these research questions.

The Dichomous definition

The methodological background/containers of LICAC AIE, are conceived based on the dichotomous (Aristotelian) definition of the «thing-in-itself» and the «thing-in-its-context».

Ibn Khald distinguishes between the «event-in-itself» and the «event-in-its context».

He says «Every event or phenomenon, whether it comes into being in connection with some essence or as the result of an action, must inevitably possess a true nature or attitude peculiar to its essence as well as to the accidental conditions that may attach themselves to it» [8].

The definition above encompasses the inherent characteristics of the object of analysis or its self-manifested properties, as opposed to its transformation through action within a specific context that also has its properties and attributes. A person has inner characteristics revealed by his or her existence. This equates the «thing-in-itself». The actions and undertakings of the person reveal conditions that could affect the person or others. This equates the «thing-in-its-context» or within its surroundings. The perception of a thing that exists in the outside world, in a natural or arbitrary order, turns into apperception (conscious perception) when applying thinking to transform «the thing-in-itself» into «a thing-in-its context», or when perceiving the inner characteristics of a person from within a specific context.

An apple in-itself has its innate or intrinsic attributes that we can differentiate and reveal, for instance, through our sensory system. The «thing-in-itself» is a kind of definition. The «thing-in-its-context» reveals the attributes of the context where it exists as well as the actions or activities that transform it. The process of transformation merges the innate characteristics of the thing with the innate characteristics of the context producing reasons and arguments on the how and why of transformation. An apple in its context is a transformed apple through contextual attributes. However, both the apple and the context are necessary when analysing and applying thinking to them.

Talking about an apple without defining its intrinsic attributes, can give biased conclusions, talking about the context of the apple without taking into consideration the intrinsic attributes that describe that context may also lead to error. We have to consider the two types of intrinsic attributes, those of the apple isolated and those of the context of the apple where transformation happens. When merging the thing and its context, the attributes become less distinguishable. Inference from the merged data could anew reveal some attributes, if not all depending on knowledge of the methodological definitions and concepts implied. This dichotomy of the thing and the context represents the quintessence of every methodological endeavour.

Ibnūn’s Khald theories of thinking (the discerning, experimental and speculative intellect) and his didactical phases (acquirement, improvement and mastery of knowledge) demand a differentiation between the two constituents of the dichotomous definition.

With reference to LICAC AIE, the first and second steps of Localisation and Identification help in acquiring knowledge about the dichotomous parts of the object of analysis. To acquire knowledge, we need first to localize the object of analysis in-itself and identify it in its context. These are two closely related types that Ibnūn’s Khald

prefers to gather under the term « ground principles», the intrinsic and extrinsic principles. The object of analysis is first considered isolated and then considered from within its proper context where it undergoes transformation. Attributes defining the thing in-itself are, for instance, the Solidity of the thing, its Extent, its Genus Proximum or its type as well as its specificity or Differentia Specifica. As shown in Figure 2, these are termed as SEGD or the SETS-instrument of evaluation [2].

Attributes that transform the thing when considered in its context embrace environmental as well as political and socio-economic variables. The solidity of a thing in itself may lose its characteristic when transformed within a context.

The third methodological step in LICAC AIE is Comparison. It improves already acquired knowledge due to the discovery of similarities and differences. The remaining steps in LICAC AIE concern mastery of knowledge. They include Analysis, Conformity with reality, Acceptance, and potentially Implementation and Evaluation. All of them initiate speculation and reflexivity.

The methodological steps of LICAC AIE agree with Ibn Khaldūn’s theories of thinking (Differentiation, Experimentation and Theory building) as well as with his didactical phases (acquirement, improvement and mastery of knowledge). As previously mentioned, Graph 1 composes and explains the didactical premises, the theories of thinking and the method of analysis.

When revealing causes and arguments, a person’s methodological insight permits her to connect a series of causes and consequences. This resembles the case of playing chess, says Ibn Khaldūn. Some are able to plan a long series of moves and countermoves ahead, while others cannot do so. Some can understand a causal relation in two or three links ahead. Others can reach up to five or six, below are Ibn Khaldun’s theories of thinking.

The idea behind the above introduction with its objective, its comparative view, research question and dichotomous definition is meant to secure us some ability or capacity to learn LICAC AIE.

Phases of Thinking

The title of section 36, chapter 6 of the Muqaddimah of Ibn Khaldūn, reads «The right attitude in scientific instruction and toward the method of giving such instruction». He discusses three phases of thinking and says that «the ability to think is directed toward some objective whose two extremes it has perceived, and now it desires to affirm or deny it. In almost no time, it recognizes the middle term, which

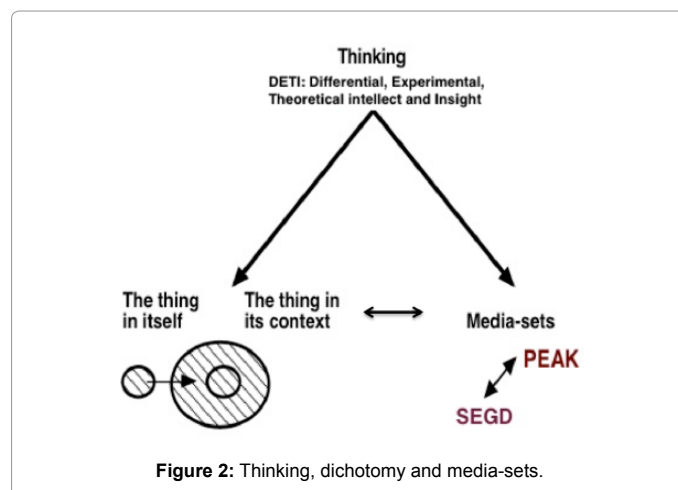


Figure 2: Thinking, dichotomy and media-sets.

combines the two extremes, if the objective is uniform. Or, it goes on to obtain another middle term, if the objective is manifold. It thus finds its objective. It is in this way (Ibn ūKhaldn, that the ability to think, by which man is distinguished from all the other animals ». This reminds of thesis, antithesis and synthesis.

Socio-cultural theory maintains that human mind is mediated [9]. Input through sensory system, as well as acquired experiences constitute the ground base of mediation that is optimised through cognitive and didactical awareness.

Vygotskij and Cole [9] talk about input through sensory system that constitutes the ground base of mediation. For Ibn Khaldūn, the input of the sensory system causes the perception of the two extremes (thesis and antithesis) and the recognition of the middle term that harmonize between them (synthesis). How thinking itself works depends on revealing the ground attributes lying behind the object of analysis and those embodied in the context that activates thinking.

Ibn Khaldūn contextualizes the functional «powers» of the brain into three phases of thinking. These are the Discerning, the Experimental and the Speculative intellect. In other words, to think is to distinguish between things; link them to our experiences, or experiment with them, when lacking experience, and make assumptions about them when formulating theories. This is how a phenomenon is mentally scanned in search for its «hidden truth» or ground principles.

The most basic level of thinking is to «perceive» the existence of things and describe properties that differentiate them from each other and from similar things.

The discerning intellect is «...man's intellectual understanding of the things that exist in the outside world in a natural or arbitrary order, so that he may try to arrange them with the help of his own power. This kind of thinking mostly consists of perceptions» Perception is a picture that the mind constructs internally by putting pieces together. Differentiation is based on perception and sensation; i.e. what the «eye» can see, the nose can smell, the ears can hear and the body can respond to. When we recognise one thing as an apple and another thing as a lemon, it is because we earlier had differentiated between them through our sensory system. Thus, differentiation is the basis of all methodological endeavours. Closely connected to the discerning intellect is the experimental intellect.

When you bite into a lemon, your facial expression will tell that the lemon tastes sour. Others can vividly imagine that sensation and respond likewise. Someone, who never tasted anything sour, will not react in the same manner. The experimental intellect is «...the ability to think which provides man with the ideas and the behaviour needed in dealing with his fellow men and in leading them. It mostly conveys apperceptions, which are obtained one by one through experience, until they have become really useful ». The experimental intellect covers experience and attitudes as well as communicative abilities, as in Bloom's psychomotor and affective domains. Experiences gained from earlier contexts remain «speculative» in newer contexts until they are confirmed or rectified.

Together, the discerning and the experimental intellects compose the most usual parts of our daily thinking where observations, experiences and attitudes are predominant. This may also be the reason why we find theoretical thinking more demanding and exhausting. In LICAC AIE, the two abilities of discerning and experimentation are included in the first two phases: Localization and Identification.

Ibn Khaldūn describes the third phase of thinking, the theoretical

or the speculative intellect, as the ability to think that «...provides the knowledge, or hypothetical knowledge, of an object beyond sense perception without any practical activity going with it. This is the speculative intellect. It consists of both perceptions and apperceptions, which are arranged according to a special order, following special conditions, and thus provide some other knowledge of the same kind, that is, either perceptive or apperceptive ».

The speculative intellect is a higher stage than the two previous ones. No practical activity is necessary. If we know how to crossbreed plants, we may be able to transfer sweet properties from oranges to lemons, thus creating a «middle» variety. Here we override mere differentiation and experimentation. Apart from the previous phases of Localization and Identification, all the remaining phases of LICAC AIE are activated here: Comparison, Analysis, and Conformity with reality, Acceptance, Implementation and Evaluation.

When deducing something from something else, perceptions (from the first stage of thinking) and apperceptions (from the second stage) are structured according to certain logical rules. This may result in higher discoveries, again in the form of perception or apperception. A thought is often processed through a start-up stage, a middle stage and a final stage: (thesis, antithesis and synthesis). Synthesis is the combination of diversity or opposing elements into a unity that adds something new. This is induction, or theory building. Mike writes that «Analysis is precision picking apart, while synthesis is like the use of metaphor to use images from elsewhere to think about some phenomenon under study ...»

Theoretical analysis is to discover patterns, disclose components and uncover hidden meanings. One looks for connections between diverse opposing components, deduces the plausible ones and generalizes them. Such cognitive processes could lead to the discovery of reasons, and causes behind phenomena.

Perception is pictured by the mind through our sensory and perceptive powers. Apperception is both pictured and believed to be true or probable because of our experiences, experiments and theories (until they are refuted). The development from smoke to fire in a front-to-body collision between a car and a tramway could provoke the prompt reaction of a person who is quick to picture the forthcoming consequences of the collision.

In his article entitled *Theory Construction as Disciplined Reflexivity*, Weick underlines a saying ascribed to Kant that «perception without conception is blind; conception without perception is empty». Insight is to retain the «possible» and reject the «impossible». It enables us to make judgement and perceive the invisible the same way we perceive the visible. Here lies the dialectics between perception and apperception. Associative thinking promotes insight. It enables the brain to revive and use earlier thoughts from similar contexts. Most thoughts lie dormant until associated to something through form, colour etc., and pictured cognitively within their context. The three phases of thinking (differentiation, experimentation and speculation) secure us some cognitive gains when we use them consciously, both in time and space. An example may help here.

LICAC AIE illustrated and explained

Imagine the picture of your primary school - the buildings, the classrooms, your classmates, and the teacher and how you used to walk out of the schoolyard back home. Now, revive the picture of the same school and answer the following questions:

- Which changes, similarities and differences do you notice

between the picture of your school back then and its picture in your mind today?

- Which experiences do you relate to your schooldays back then?
- Which assumptions or theories do you have today that could confirm or disconfirm what you earlier considered useful at school?

As previously mentioned, one needs to grasp the thinking mechanisms that make possible the process of differentiation, experimentation and integration, both in time, as in the example above, as well as in space, as in the example of playing chess. All the three phases of thinking are useful when reflecting upon explorative questions, and they do not exclude each other. However, applied separately, the discerning, the experimental and the speculative intellect stand as independent methodological tools, each with a function that is applicable when discussing the steps of LICAC AIE.

The letters in LICAC AIE stands for Localisation; Identification; Comparison; Analysis; Conformity with reality; Acceptance; Implementation and Evaluation as shown in Figure 3.

Below, each step is introduced and commented and, whenever possible, discussed and exemplified.

Localization: To localise an object of analysis in its context, presupposes prior knowledge about the essence of the object to differentiate among its components, or the ground attributes that underline, it as well as those underlying the context where it is analysed or transformed.

Before engaging in any analysis whatsoever, one should localize the object of study as correctly and precisely as possible so that analysis could be done within the correct context. The surface similarities that exist between different contexts could, when hidden, lead to tremendous errors. Contexts are not similar. Each context is unique in spite of similarities and differences.

Relevant questions here are: Where does the problem or the object of analysis exist? Does it exist in the organization, for instance, or in its surroundings? If it exists within an organization, in which portion of the hierarchy, division, department or physical structure could we localize it? If it exists outside the organization, in which segment of the environment could we correctly localize it?

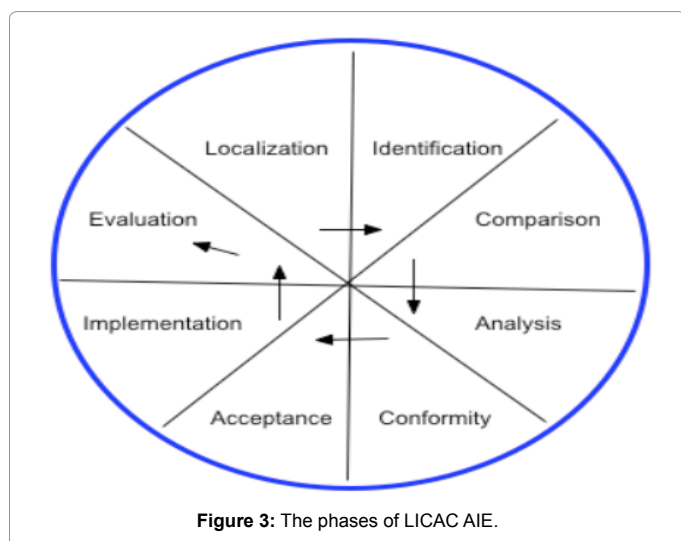


Figure 3: The phases of LICAC AIE.

The most appropriate stage of thinking in this phase of localization is the Discerning intellect. We discern and differentiate among attributes that permit localization. Indicators that are withheld are those that clearly distinguish among the attributes of the thing and strengthen localization.

One could here think of inherent indicators like the Solidity or the Strength of the attribute or the thing, its Extent, Genus Proximum or type and its Differentia Specifica or specificity, previously termed the SEG-D-instrument of evaluation. The phases of Localisation refer to where a thing or a phenomenon, for instance, performance appraisal should take place.

Identification: Identification is the second phase in LICAC AIE. Identification clarifies and furnishes arguments on why certain localization is correct or favourable, taking into consideration the simplicity or complexity of the context in question. A performance appraisal, for instance, could «in-itself» be described as a discussion between a subordinate and her immediate superior about yearly plans and efforts within the organization.

After having pointed out the intrinsic attributes, using SEG-D-instrument, the question of contextual identification could be: what governs the success and failure of a performance appraisal, or how to identify its contextual attributes or particularities? Seen from within a specific context, a performance appraisal should give information about power, gains or losses, behaviour and knowledge (cf. PEAK) that enable us to establish an explanatory scheme. Suppose that the performance appraisal is held in the «glamorous» office of the superior or the manager. This could be interpreted as demonstration of power and strength. However, both the superior and the subordinate could gain from a fruitful discussion, though not in equal proportions. Both actors exhibit certain behaviour and certain knowledge, while conducting the performance appraisal, although differences are probable because of localization. Therefore, it may be unfortunate to localize a performance appraisal in the office of the superior. This could lead to biased results caused by the weight given to the variable power in this particular context. In a neutral place within the organization, the weight of such a variable would have been reduced. Once carried out or transformed, the characteristics of the thing-in-itself (performance appraisal) and the thing-in-its context are irreversible.

As to the PEAK-variables mentioned above, philosophers and social scientists have often reflected on why societies differ as to their development. Chernilo [10] brilliantly explains how Parsons, Luhmann and Habermas [11] have focused on the characterization of the strongest dynamics of social co-ordination in differentiated societies.

Prominent theoreticians choose often three to four universal variables to explain their synthesis of thoughts and theories. Parsons' media of exchange, for instance, are composed of four universal variables, i.e. money, power, influence, and value commitments. In comparison, Ibn Khaldūn's media of growth and development are: power, earnings, activities or artistry and knowledge, termed the PEAK-paradigm.

Such universal variables are powerful instruments of analysis. However, it is essential to grasp the thinking mechanisms that make them powerful. The starting point is the conception of the problem or the thing «in itself» and «in its context». How does it look like? What is it composed of? Can we use the PEAK-paradigm to identify its underlying elements? How many contexts are implied and which one to choose?

Are the elements revealed by PEAK identifiable and measurable, for

instance, through the SEG-D-instrument of evaluation? How properly can we outline or describe the problem? Do we need models to sort out the elements revealed by the problem?

The Discerning intellect is most appropriate stage of thinking here. Once a thing is localized in its proper context, it could be differentiated from similar things to identify it through intrinsic and extrinsic characteristic or attributes. Figure 2 illustrates thinking, the dichotomous definition of an object of analysis and media-sets [12]. The didactical steps when learning them is to acquire, improve and master knowledge.

When analysing something, one differentiates between its two constituent parts: the object of analysis and its context. Separation clarifies the focus of analysis and helps to avoid methodological pitfalls regarding these two constituent parts. «Quoting out of context» is when a passage is removed from its context or surrounding environment.

As previously said, an apple perceived isolated is not the same as an apple perceived in a context, or after transformation. An apple in itself differs from an apple in its context or in the hand of a child. Isolated, the apple could be observed and described, for instance, by reference to its origin, type, colour, consistence and subdivision. The context tells what happens to the apple when action affects it. Time is important when reflecting within contexts. Being a teacher in the 14th century is not the same as being a teacher in the 21st century. Both the self and the context are subject to change and transformation.

A problem is thus composed of inherent characteristics and properties, when seen isolated. It is composed of contextual attributes when envisaged and assessed through contextual variables. An incident occurring by itself, like a hurricane, for instance, has natural properties and attributes that could be appropriate to the hurricane in-it as well as to the hurricane in its-contexts. In itself, the hurricane is a phenomenon that could be described by reference to its strength, extent, type or genus proximum and sector, specificity or differentia specifica (the SEG-D-instrument of evaluation). However, the hurricane, as a metaphysical activity, refers to surrounding matters and climatic changes perceivable through the destruction of houses, flora etc. There is no «direct» human intervention here as to the consequences of the hurricane.

When choosing an explicit context, we need to identify and delimit the diversity of variables, by giving «name» or «identity» to some, and by measuring others. To analyse variables, one «cleans» them from irrelevant data to discover the reasons and arguments behind what is relevant. This presupposes the use of typologies and models.

In the case of the hurricane, Human intervention could be envisaged through reconstruction efforts. Here again we have properties and attributes relevant to the thing in-itself, i.e. reconstruction, as well as to the thing in its context, i.e. human efforts. Reconstruction in itself could be assessed by reference to the solidity of construction, its extent or dimensions; the type of material used and the sector of construction, i.e. residential as opposed to industrial for instance. In a context, reconstruction efforts could encompass intentions that we want to make explicit.

These could be intentions to empower those who lost their houses; costs entailed and benefits realised; activities initiated as well as the knowhow and technology applied. Reasons and arguments thus deduced could explain the solidity of construction and its extent or dimensions.

However, the consequences of human interventions, as well as the reasons and arguments behind them, are in some cases more concealed

than in others, due, for instance, to hidden motives or approaches.

In one of his most cited experiments, the Russian cognitive psychologist Vygotsky asked a peasant to arrange objects apparently belonging together: a hammer, a saw, a hatchet and a log of firewood [13]. The unschooled peasant immediately linked the saw, the hatchet and the log of firewood. Vygotsky commented saying that one of his friends, referring to the schooled peasant, associated the hammer, the hatchet and the saw together, because they were all tools.

«Your friend must have a lot of firewood!» replied the peasant.

When arranging the object, the peasants differentiate between objects as to form, colour and fabric while reviving their respective experiences regarding them. The «thing in itself» is the arrangement of objects. The «thing in its context» is the human interventions that decide the outcome of the experiment.

The overall objective of the experiment and the real context are certainly hidden for the peasants. The peasants' different arrangements reveal some sort of cognitive understanding and contextual perception. One peasant is probably affected by school-intelligence since he arranged the objects as tools. Theoretically, the four objects could be arranged in many different ways, as explained in the following example.

A gardener was once asked how many entrances in a residential area he could ornament using three types of flowers differently arranged. Here, the «thing-in-itself» consists of three types of flowers. The «thing-in-its context» is to use all three types to carry out certain tasks leading to certain results.

Being in control of the context, the gardener established a list with colours that empowered him to do the job. (Here, the schooled friend of Vygotsky would probably have used permutation and combination to find out, and quickly, the number of different ways for ordering the flowers.)

Three elements can be permuted (arranged) in six different ways: a b c, b a c, c a b, a c b, b c a, c b a. These different orders are called permutations of a, b and c. In other words, n different objects can be permuted in n! (n factorial), i.e. (n-1)*n or (3-1)*3 ways gives six different ornamentalations. However, not all variables have numerical properties as the case is with «a, b and c» or with flowers of different colours in the example.

Had the four elements a, b and c been of abstract nature, we would have been forced to find other properties than colours or types of flowers - to arrange them. Contexts where the diversity of variables gives different causes and arguments are called explorative contexts. After revealing the most relevant variables, they could eventually be focused using dependency relations, as in the following example.

In the case of Vygotsky's experiment, the actors implied were either «neutral» or told to carry out a certain task, as in the case of the gardener. The actors could also stand as action-researchers, being directly implied in the context, as in the earlier example of performance appraisal.

Once we finish working out the problem, we may communicate our results to others. Our conclusions may report the type of discoveries we went through, from the start to the end of the project, and to what extent they could be of learning potentials for others. Alternatively, we may intervene as action-researchers to undertake something concrete for solving the problem.

When we encounter a problem, we first localise it and then spend time thinking about it. Our thoughts swing between the problem

in itself and the problem in its context. We may discover multiple variables against which our problem could be discussed. This compels us to define and delimit the properties and attributes relevant to the problem and its context.

In our endeavours, we may use thinking as a tool for dissecting and classifying the data to be gathered. The data could then be structured and assessed using an appropriate scale of measurement. To go further with our definitions and limitations (localisation and identification), we may design a research approach that encapsulates our thoughts around the problem and all our steps of analysis.

The PEAK-paradigm, the SEGD-assessments, and their derivatives are applicable under the phase of identification. PEAK stands for Power, earnings, Artistry or activity and Knowledge. The SEGD stands for Solidity, Extent, type or Genus proximum and specificity or Differentia specifica. The PEAK and the SEGD/SETS are discussed and exemplified in other places. Table 1 shows the interaction between these two instruments of evaluation.

The scale from 1-4 symbolises the choice of measurements when using SEGD. Here 1 is the weakest. The diagonal reads: The solidity of Power, the extent of Earning, the Genus of activity and the Differentia specifica of Knowledge.

Comparison: Lévi-Strauss [14] says that comparison is the basis of all understanding. Comparison points out similarities and differences and may save us some time, energy and money. The most appropriate stage of thinking here is the Experimental intellect.

Relevant questions here could be: Have others had similar problems as the one we are facing? If this is the case, how did they tackle it? Can we learn from other’s mistakes or successes?

Mike Metcalfe [15], referring to loops learning of Argyris and Schön, says in paragraph 12 that: «The action learning epistemology of knowledge creation through learning loops provides at least two further examples of comparison. It sets up learning or knowledge creation to be motivated through the identification of problems as the comparison between a desired outcome and the actual one. Then each learning loop can be compared with the previous one». His further arguments that empirics can be perceived in terms of comparison and concludes that: «Comparison seems to provide an alternative means of thinking about how to improve the quality of qualitative research, one that might be recognised across epistemologies. Quality becomes an issue of the credibility of the comparison» - Hunak.

Analysis: The most appropriate stage of thinking to be used in this phase of analysis is the Speculative intellect.

Organizational models, like that of Michael Beer or the Octograph

– An eight corners cube that would be explained another place, often support theoretical analysis. It is also possible to replace models by less detailed devices like the earlier explained PEAK-paradigm the SEGD-measurements of assessment or other methodological devices.

Relevant questions in theoretical analysis are: How can we understand what we have been through? Should the variables gathered

Assessment through the SEGD	Strength solidity	Extent	Genus Proximum	Differentia Specifica
Power/ empowerment	S-P ¹⁻⁴	E-P	G-P	D-P
Earnings	S-E ¹⁻⁴	E-E	G-E	D-E
Activities/ Performance	S-A ¹⁻⁴	E-A	G-A	D-A
Knowledge and Technology	S-K ¹⁻⁴	E-K	G-K	D-K

Table 1: Interaction between the components of PEAK and SEGD.

about the problem be delimited? Which reasons and arguments would we rest with after delimitation? Can we illustrate our findings geometrically? Are there any causal relations between three or more parts of the problem (think: thesis, antithesis, synthesis)? What are the possible solutions to the problem and with which consequences?

Analysis could be action-oriented and concrete, but it could also be far beyond reality, philosophical and abstract. It depends on what we need the analysis for. Since we are not concerned with philosophical topics in their widest sense, our analysis would avail if it lies near reality and does not deviate much from it.

Conformity: In matters of conformity with reality, a person should look at his sources and rely upon his insight. With a clear mind and straightforward, using natural common sense, he should distinguish between the nature of the possible and the impossible. «*Everything within the sphere of the possible should be accepted, and everything outside it should be rejected.... We do not have in mind ‘possible’ in the absolute sense of what is intellectually possible. That covers a very wide range, so that it cannot be used to determine what is possible in actual fact. What we have in mind is the possibility inherent in the matter that belongs to a given thing.*» Conformity with the real world makes our analysis realistic and less philosophical. Ibnūn Khald underlines again that «... to establish the truth and soundness of information about factual happenings, a requirement to consider is the conformity».

One has to be armed with practical plausible knowledge about the facts of the outside world in order to consider conformity «... because the utility of the factual happening, can be derived from it, itself, and from external evidence by checking the conformity».

Relevant questions in respect to conformity are: What have we actually accomplished and achieved? Is our analysis acceptable to others? Is their congruence between our analysis and reality the way we perceive it? Is it possible to implement our proposed solutions? How would the situation look like after having implemented our solutions?

Once Localization, Identification, Comparison, Analysis and Conformity with reality have been undertaken and results assessed, we rest with the action-research part the method: Acceptance, Implementation and Evaluation.

Let us suppose that our analysis conforms to realities of the outside world. A reflexive phase would let us brainstorm ourselves as to what we have reached so far or how conform to reality is our analysis in fact.

Acceptance and reflexivity: Reflexivity is a methodological tool that was extensively used by earlier philosophers and thinkersürefers. IbntoitKhalidas:«ta ħkim an-naẓar wa-l-basīrah fi-l-akĥbār»

(«To judge the material mediated using perception and insight»). «To reflect is to look back over what has been done so as to extract the net meanings which are the capital stock of intelligent dealing with further experiences. It is the heart of intellectual organization and of the disciplined mind» [16], relevant questions here are: What have our analysis lead us to, so far? How should be carry the analysis further? Who perceive the problem as a problem? Who owns the interpretations we so far have reached to?

Implementation: Implementation is a direct phase that has to do with practice or project Management. Project management offer many methodological approaches that it is sufficient here to mention some of them. WBS (Work Breakdown Structure), Gantt-diagram, CPM (Critical Path Methods or PERT (Program Evaluation Review Techniques).

Relevant questions under the phase of Implementation are: Whose responsibility is it? Who would see to that implementation is carried out? Who will carry the job? Do we need risk-analysis, Gantt-diagram or other similar instruments and devices known in project management? What type of real work are we engaged in to implement our solutions?

Evaluation: Ibn Khaldūn says that logic concerns «... the norms enabling a person to distinguish between right and wrong, both in definitions that give information about the essence of things, and in arguments that assure apperception». However, our material could contain things that do not admit logical conclusions when we look for conformity between them and the facts of the outside world. In such cases, conformity ought to be preferred.

Relevant question in this phase of evaluations are: How was it? Did we reach the goals and objectives we opted for at the start? Could we document that we have solved the problem? Is this the only evaluation or had we had others evaluations underway?

The above phases of localization, identification, comparison, analysis, conformity, acceptance, implementation and evaluation secure us knowledge about the different activities or undertaking we carry out when analysing the object of analysis using all our theories of thinking and our methodological paradigms. However, this also implies another type of apprehension, didactical learning, and meaning that we follow some specific didactical phases when learning qualitative methodology.

Didactical Phases for Learning Methods and Theories

Ibn Khaldūn three didactical phases are progressive. Knowledge, given in one didactical phase, is improved, mastered and developed in others. Under the title

«Scientific uninstructed says that ion is a craft» Ibn Khaldūn «... skill in a science, knowledge of its diverse aspect, and mastery of it are the result of a habit which enables its possessor to comprehend all the basic principles of that particular science, to become acquainted with its problems, and to evolve is not forthcoming» its details from its principles, as long as such habit has not been obtained, skill in a particular discipline.

The following Graph 1 gives overview theories of Ibn Khaldūn thinking and his didactical phases in interaction with LICAC AIE, and with some of Bloom's question cues. Reflect on one of the boxed in the diagonal and connect the contents of the box to the theory of thinking and the didactical phase of knowledge learning that intersect at the box. To master knowledge is an activity that is supported by the theoretical intellect that conveys apperception (conscious perception). The intersection between thinking and master shows that one has to analyse, assess, create, deduce, discover, extend, generalize, inter, integrate etc. The appropriate phases of LICAC AIE here are Analysis and Conformity.

Skill in a particular science demand development of problems, research questions and other details that give place to further investigations. According to Ibn Khaldūn, when we investigate or probe deeply using our methods, we could invent a new science, interprets something, discover and correct mistakes, supply topics that are lacking, arrange and improve something, collect scattered materials or compose summaries. These seven purposes were previously interpreted through variables of Power, Earnings, Activities and Knowledge, the PEAK-paradigm. We renew science and enrich knowledge didactical.

Ibn Khaldun's progressive didactical phases are to acquire, improve and master knowledge.

Ibnūn Khaldun says that teaching is effective only when it proceeds gradually and he proposes three didactical phases: At first, the teacher presents to the student «...the principal problems within each chapter of a given discipline. He acquaints him with them by commenting on them in a summary fashion. In the course of doing so, he observes the student's intellectual potential and his readiness for understanding the material that will come his way until the end of the discipline under consideration is reached. In the process, the student acquires the habit of the science he studies».

The first didactic phase, i.e. the initial learning experience, is how «to acquire knowledge», and it agrees with differentiation or the Discerning intellect (cf. above). Here, the tutor illuminates definitions, differences and similarities using question cues like to: define, describe, differentiate, discriminate, distinguish, identify, label, outline, point out etc.

The second didactic phase is to «improve knowledge» corresponds to the Experimental intellect (cf. above). The main goal is to develop transferability of knowledge to similar contexts and situations. Problems are worked out through one's own and other's experiences and resources. Appropriate question cues are to: apply, change, compare, compile, compute, combine, construct, transfer, design, explain, give examples, illustrate, match, record, rewrite etc.

Ibn Khaldūn says that acquiring «the habit» of a science starts with summaries and observations as in the first phase. This is approximate and weak because it only enables the student to have a brief understanding of the discipline under study and its problems. Therefore, the second phase is where the teacher «... leads the student back over the discipline a second time. He gives him instruction in it on a higher level. He no longer gives a summary but full commentaries and explanations. He mentions to him the existing differences of opinion and the form these differences take all the way through to the end of the discipline under consideration. Thus, the student's scholarly habit is improved »

The third and highest didactic phase is to «master knowledge». It implies abstract generalisations through conscious use and application of the Speculative intellect. The main goal is to realise apperception (conscious perception). Appropriate question cues here are to: analyse, appraise, assess, create, deduce, develop, discover, evaluate, extend, generalise, infer, integrate, judge, predict etc. The learner could here make tentative generalisations and establish plans of research and development.

Mastery of knowledge demands that the teacher «leads the student back again, now that he is solidly grounded. He leaves nothing that is complicated, vague, or obscure, unexplained. He bares all the secrets of the discipline to him. As a result, the student, when he finished with the discipline, has acquired the habit of it. This is the effective method of instruction. As one can see, it requires a threefold repetition. Some students can get through it with less than that, depending on their natural dispositions and qualifications. »

Giving question cues or hints to the student and the teacher helps both to exploit progression in cognitive incapability addition. However, Ibn Khaldun prefers, in addition, verbally active students. He says that verbal expression «is the first step in the communication of thoughts. As it is most important and noble part, it includes the sciences. However, it comprises every statement or wish (command) that in general enters the mind. After this first step in communication, there is the second. It is communication of one's thoughts to persons who are out of sight or

bodily far away, or to persons who live later and whom one has not met, since they are not contemporaries. This is written communication».

Ibn Khaldūn gives verbal communication a predominant place in learning. He says that: «*The easiest method of acquiring the scientific habit is through acquiring the ability to express oneself clearly in discussing and disputing scientific problems. This is what clarifies their import and makes them understandable. Some students spend most of their lives attending scholarly sessions. Still, one finds them silent. They do not talk and do not discuss matters. More than is necessary. They are concerned with memorizing. Thus, they do not obtain much of a habit in the practice of science and scientific instruction*».

Many a teacher would love to have active discussions in the classroom. To animate class discussions is to find the appropriate question cues that ignite reflection and action. It avails to stress the use of verbal strategy in teaching, also when it comes to methodological issues.

Verbal consolidation of methodological teaching seems easier when connected to universal theoreticians, as for instance, Bourdieu, Niklas and George [17-19] especially concepts such as «Double contingency» and «Personal Constructs» that evoke communicative abilities. The previously mentioned progressive didactical phases of IbnūnKhald are to acquire, improve and master knowledge. They agree with his theory of thinking.

LICAC AIE compared

Comparison here is external, i.e. comparing LICAC AIE to other similar methods. LICAC AIE is originally constructed based on the earlier discussed stages of thinking. It is open for all typologies and instruments of analysis that could fall under its phases. In other words, it is a holistic qualitative procedure. Below, we are tempted to compare LICAC AIE to John Rowan's cycle of research.

In his article «New Approaches to Research for Systems Theory and Organization Development», Peter Reason argues that the holist viewpoint in Systems Theory requires a suitable research methodology. The article mentioned illuminates many aspects and critics of research methodology [20,21]. Of these, we retain the Research Cycle by John Rowan, which could be comparable to some of the procedural approaches in LICAC AIE.

Used in traditional research projects, the stages in the figure above build on each other; each carries on smoothly from the former:

- Identify and think about an area of research and review the literature (Thinking)
- Design your research approach (Project)
- Gather data on your subject (Encounter)
- Return to your desk, analyse the data and write up your results (Communication)
- Take a rest until other issues engage your attention (Being).

Rowan means that traditional research based on «efficiency questions» should be supplemented by action research. The cycle of research mentioned above could therefore be rectified and used by actor-researchers where research is regarded as a part of a life-style. In such cases «...the research cycle must be seen as a dialectical cycle, in which each stage contradicts the previous one: ». This is what Peter Reason has tried to do through revisiting Rowan's cycle of research.

Peter Reason says that the « notion of praxis points up the essential

interrelation between action and reflection: action requires reflection to give it purpose, choice, and direction; reflection requires action to give it a reality base and meaning. In any situation we need to find the appropriate and dynamic interplay between the two ».

The pathways in LICAC AIE seem to combine the two approaches mentioned above: Rowan's Cycle of traditional research as shown in Figure 4, where stages smoothly build on each other; and the enlargement of Rowan's research cycle to a dialectical cycle where each stage contradicts the previous one [22].

LICAC AIE satisfies, through the rule of conformity with the real world, the action-research approach where research is considered as part of a life-style. All methodological endeavours are in vain whenever conformity with the real world is not satisfied. Another important factor in LICAC AIE is the criterion of acceptance where implied actors have to accept the results of analysis, before any implementation is carried out.

Qualitative methodological approaches are the product of cognitive capacities that are often activated within a schooling system implying tutor efforts and didactical awareness. Didactical awareness without methodological awareness is utopia and vice versa. Which type of intellect the teacher activates, at which stage of mediation and through which activities; depend on her awareness of her didactical strategies (didactical awareness). When concerning LICAC AIE, progressive acquirement in the class situation opens many horizons for the method.

As previously stated, when using LICAC AIE, the researcher is supposed (I) to distribute the methodological steps (D) according to a system of thought (Ö) that he or she has control over (L). Reflexive support comes from one's own cognitive associations using helping acronyms like SWOT, PEAK or SEG D (S). However, a successful process depends on feeling of empowerment and mastery (E) and that conclusions reached (Ö) can further be developed (D) in contact with reality (Ö).

Conclusion

We started this paper by postulating that the dichotomous definition of the object of analysis functions as methodological containers, and the further construction of the properties and attributes of these two containers serve to delimit the complexity and diversity of contexts and pave the way for methodological approaches.

The distinction between problems considered isolated and in specific contexts permits us to use our stages of thinking in a progressive

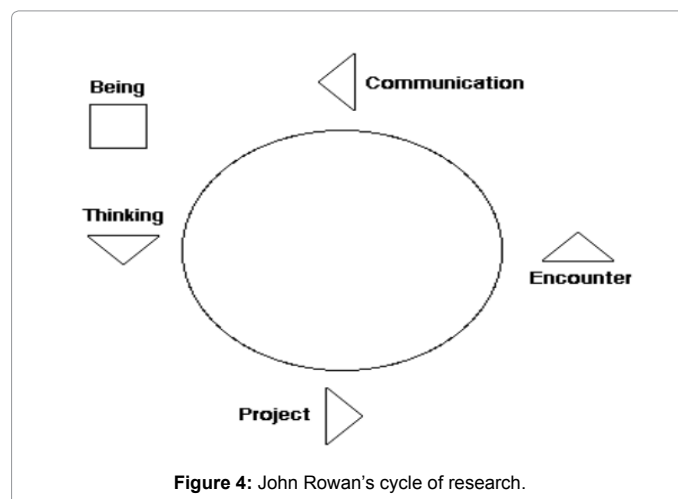


Figure 4: John Rowan's cycle of research.

manner, i.e. first the discerning, the experimental and the speculative intellect. As tools of analysis, these stages could by themselves uncover contextual similarities and contradictions.

Thinking and verbalization techniques give methodological flavour and permit movement from limited capacity to more variable patterns of problem solving. According to Niklas, our ability to treat a big quantity of information is limited. It will therefore be better to work out information into a certain order of priority and try to reduce it while creating a reliable pattern, which mentally is simple, but also representative.

Our research question reads: How methodologically important is differentiation between «the thing-in-itself» and «the thing in its context», and what types of media or paradigms differ between the attributes of the thing and those of the context before and after contextual transformation?

The pathways in LICAC AIE are suitable for qualitative research, as well as action-oriented research, where the actor subjectively pursues her interest while satisfying conformity with reality. An effective use of LICAC AIE presupposes reflexivity and incessant training to acquire, to improve and master knowledge (Ibn Khaldūn's three didactical stages). These are prerequisites for de-learning, re-learning and cognitive development.

The PEAK-paradigm and the SEGD-measurements of assessment delimit complex contexts and construct contextual contradictions into causal relations.

However, methodology seems often to be more accessible when applied to something concrete and of interest to the researcher.

It is said that a theory describes, explains and preferably predict a happening or phenomenon. We use mostly our discerning and experimental intellect to describe and explain. However, to predict happenings implies theoretical assumptions. This is the highest aspiration of a theory. When contexts are rich in information, diverse and complex in nature, we need a theoretical frame of analysis that could be used to co-ordinate and predict things. LICAC AIE is a frame of problem solving, a primary methodological contribution. It has certainly its methodological limits that are outside the scope of this article.

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