



# Exploration of Instructional Analogy in the Light of *Upamana*: A Review

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## ABSTRACT

Learning process might have developed from the period when human beings began to live together by visualizing nature. But teaching became a structured discourse in due course on a later phase of human civilization. A teaching method comprises the principles and methods used by teachers to enable student learning. Recently it is observed that the methodology should satisfy all four types of learners such as Visual, Auditory, Kinesthetic and Writing/Reading. Instructional analogy, a recent pedagogical construct, is the use of analogical approach in teaching, widely appreciated as an effective method of transaction. Instructional analogy adopts a method in which complex phenomena are simplified by comparing the same with commonly available examples from the surroundings. In Indian philosophy, especially Nyayadarsana, *Upamana pramaṇa* roughly corresponds to the concept of Instructional Analogy. This method is accepted in Ayurveda and widely used to illustrate different sets of ideas starting from concepts up to symptomatology of diseases. This article examines the comparable aspects of Instructional analogy and *Upamana* in detail. This attempt builds up a background to develop new versions of Instructional Analogy in teaching Ayurveda.

**Key Words** *Teaching methodology, Instructional analogy, Upamana, Learning styles*

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## INTRODUCTION

In India, our education system evolved for many centuries. Teaching methodology starts from Gurukul tradition to classroom teaching and now digital learning. A teaching method comprises the principles and methods used by teachers to enable student learning<sup>1</sup>. There are different

methodologies that can be applied by a teacher, and it depends on the preferences of a teacher. A methodology of teaching can include the use of models, lecturing, or giving activities. It should be helpful for all four types of learners. Ayurveda prefers to explicitly elaborate its teaching methodology under separate headings such as



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*Adhyayana-adhyapana-vidhi*<sup>2</sup>. Even though such descriptions are separately available, the *Samhitas* explore different probabilities of teaching methods throughout whole their content to enable better teaching-learning process. Use of *Upamana* is one among many such approaches, spread throughout the whole length and breadth of *Samhitas*. *Upamana* is defined as knowledge of connection between a Name (*Samjna*) and the Nominated (*Samjni*)<sup>3</sup>. Use of *Upamana* is seen in many domains such as Explanation of concepts and phenomenon, Explaining human body and related phenomena, Pathology, Therapeutics, Pharmacology (*Dravyaguna*), Pharmaceutical combinations and *Swasthavrtta*. Contemporary teaching-learning scenario develops many new methods including Instructional Analogy. Instructional analogy is defined as an explicit, nonliteral comparison between two objects, or sets of objects that describes their structural, functional, and/or causal similarities<sup>4</sup>. *Upamana* and Instructional Analogy seem to be comparable in such a way that both of them use illustration of a phenomena based on its similarity with a commonly known object. In that way, exploring the comparability of these two categories will make a firm background in developing new teaching techniques in Ayurveda as well as reinventing the ancient teaching methods in an advanced fashion. In this context, it will be necessary to explore how the concept of types of learners such as Visual, Auditory, Kinestehtic and Reading Writing reflects in the use of *Upamana*.

This will again add to the chances of improvising *Upamana* in emerging context.

### Instructional analogy

Instructional analogy is the use of analogical approach in teaching, widely appreciated in contemporary teaching as an effective method of transaction. Analogies can help students build conceptual bridges between what is familiar and what is new. Often, new concepts represent complex, hard to visualize systems with interacting parts. Analogies can serve as early 'mental models' that students can use to form limited but meaningful understandings of complex concepts. So, in effective teaching, importance of analogical approach is established already<sup>5</sup>.

### Teaching with analogy (TWA) model

TWA is a famous teaching model introduced by Glynn, Duit, & Thiele. It explain with six stages like

1. Introduce the target concept
2. Review of analogue concept
3. Identify the relevant features of target and analogue
4. Map similarities between the target and analogue
5. Indicate limitations of the analogy
6. Draw conclusions<sup>6</sup>.

### Types of Analogy

Different types of analogies are present. Classification of analogies mainly of 14 types. Synonym, antonym, part/whole, cause/effect, thing/function, thing/characteristic, thing/context, category/subcategory, fact/opinion,



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object/classification, degree of difference step/process, problem/solution, symbol/referent<sup>7</sup>

### Types of learning

Everyone processes their own way of learning. It may vary from person to person. There are mainly four types of cognitive learning styles; visual, auditory kinesthetic and reading/writing.

Visual learners use visual objects like pictures, charts and graphs and make use of colour codes for easy grasping. They remember the things which are in written form and learn the lectures by watching them

Auditory learners retains data through speaking and hearing. They concentrate better with soft music playing in the background

Kinesthetic learners like to use the hands-on approach to learn and memorize. They prefer activity oriented learning. They learn through experiencing.

Reading/writing learners prefer to learn through written words. While there is some overlap with visual learning, these types of learners are drawn to expression through writing, reading articles or books, writing in diaries, looking up words in the dictionary and searching the internet for just about everything<sup>8</sup>.

### Analogy in Ayurveda: The *Upamana*

In philosophy as well as Ayurveda for attaining knowledge, *Pramana* (mean to attain knowledge) is important, one among them is *Upamana pramana*. *Upamana pramana* roughly translated as Analogical method, is one among four *pramana* accepted in *Susruta Samhita*<sup>9</sup>, profoundly described in *Nyaya* system of philosophy<sup>10</sup>, and

accepted as a method of discussion in *Caraka Samhita*<sup>11</sup>. According to *Tarka sangraha*, as the name indicates *Upamana* is the method of attaining knowledge of a thing based on similarity with a known object. This knowledge is known as analogical knowledge (*Upamiti*). In Ayurveda, this method is immensely used to bring out easy apprehension of a phenomenon by describing the same in comparison with a popular object, idol or idea.

The method of using analogy was prevalent even from pre-historic period to convey ideas effectively. First schooling in children starts from our home. While feeding babies we compare papad with moon. To please the king people used to say 'Your face glitters like a full moon, eyes sparkle like petals of lotus etc. Analogies used in different styles across the world. The beauty lies in its apt and effective application which have no boundaries time and place.

Our science deals with literary aspects. Metaphors can be thought about by the involvement of right brain. Anything can be understood holistically by right brain. Whereas left brain deals with logical thinking and judgment and helps in attitude development. These are the reasons that helps to incorporate various other things into our science and understand it better.

Analogies (*Upamana*) here help the students as well as teachers to teach, learn and memorize concepts. Visualization is the best technique nowadays for better learning and memorizing. It helps to portray things better. Analogy (*Upamana*) might have been used earlier for the same purpose.



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### Steps involved in TWAmode and *Upamana* (Analogy) – A comparative thinking

6 steps involved in TWA model. Similarly, in the classical description of *Upamana*, four steps are involved.

1. Comparative statement given by another person ('x' has similarity with 'y')
2. Person sees the object (seeing an object having similarity with 'y')
3. Recollects the previous statement
4. Identify the object. (as 'x')<sup>12</sup>.

### Types of Analogy and Analogy present in Āyurveda – A comparison

(1) Synonym – Medicinal plant like *Bakuci* (*Psoralea corylifolia*) has the synonyms of *Indurajika*, *Chandrasakala*, *Sasankalegha*, *Somaraji* etc. All these synonyms signifies *Upamana*. All of them are nominated in relation to Moon (Chandra, Indu, Sasanka, Soma etc.)

(2) Part/whole – Explanation of the relationship of a part with its whole can be done using some similar and common objects. Several parts combine together to form an object. When explaining the origin of the entire universe (*Srishti utpattikrama*), the relationship of the unmanifest' (*Avyakta*) with Purusha is explained with the example like "It is the dwelling place of many soul (*kshetrajna / Ātma*) just as the ocean is for all living and non-living substances present in it"<sup>13</sup>.

(3) Cause/effect – Cause effect relationship is the one where two things are related with each other and one is the result of other. This dichotomy we can see in Ayurveda while describing

*Dhatuparinama nyaya* like *ksheera-dadhi nyaya*<sup>14</sup> where cause is *ksheera* and *dadhi* is the effect.

(4) Thing/function - where one is object and another one is its related function. This binary is observed while describing formation of urine, where bladder is shaped like pitcher gourd (*Alabu*). Ducts (*Mootravaha nadis*) satisfy the bladder just like rivers satisfy the ocean. Just as a fresh earthen pot kept immersed in water up to its mouth gets filled with water through its sides, same way bladder with urine<sup>15</sup>.

(5) Thing/characteristic – For every object there will be specific characteristic. This binary we can see while describing symptomatology of diseases, where a particular symptom is explained in similarity with the famous object. For example in the disease *Kapala kuṣṭa* Patches are like pieces of black mud pot<sup>16</sup>, *Dandakam* makes the body stiff like a log of wood<sup>17</sup>.

(6) Thing/context – where we can explain a thing only by considering the context. This dichotomy is prevalent while describing some treatment procedures in particular context. For example, if we do *Sodhana cikitsa* in *Amajwara*, it will be Just as waking a sleeping black cobra with his fingers<sup>18</sup>.

(7) Step/process– This binary we can observe while explaining *Dhatuparinama nyaya* like *Khale-kapotha nyayam*<sup>15</sup>(law of selection) where Cakrapani explain the transformation process as pigeons pecking the grains from a threshing floor and carrying it back to their nests, required nutrients will be selected by individual *dhatwagni*.



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(8) Problem/solution - Each problem has a solution. Here two words related to each other are used in the Problem and Solution Analogy. In Ayurveda, before doing the main therapy, we should prepare the patient for the same. Otherwise it will effect negatively. The importance of *sneha* (oleation) *sweda* (sudation) before doing *sodhanakarma* explain the same. Oleation and sudation could soften dried out timber and thus the

log will not break easily, likewise in human body<sup>19</sup>.

(9) Symbol/referent – Each symbol is a reference. This binary we can see while explaining *Loka-purusha samya siddhanta*<sup>20</sup>. According to this, Universe is termed as macrocosm and living being as microcosm. Different things in the universe are symbolized as different elements in human body.

**Table 1** Item wise comparison of concepts from Ayurveda and contemporary analogy types

Contemporary analogy types	Related Ayurvedic concepts
Synonym	Nomenclature of medicinal plants
Part/whole	Origin of universe ( <i>Srishti utpattikrama</i> )
Cause/effect	Modes of <i>dhatu</i> formation ( <i>Dhatuparinama nyaya</i> )
Thing/function	Urine formation.
Thing/characteristic	Symptomatology of diseases
Thing/context	Treatment procedures
Step/process	Modes of <i>dhatu</i> formation ( <i>Dhatuparinama nyaya</i> )
Problem/solution	Importance of <i>poorvakarma</i> before doing <i>pradhanakarma</i>
Symbol/referent	Theory of interrelation of the universe and man ( <i>Loka-purusha samya sidhanta</i> )

## CONCLUSION

Education system should contain a triad of 'knowledge, skill and attitude'. In the case of medical education, to acquire knowledge, analogies have a major role and simulation technique will help to improve the skill. Developing creative attitude towards science is very important, for which new techniques have to be developed or modify the existing one with contemporary method.

*Upamana* is one among four means of knowledge explained in Susruta Samhita and approved in Caraka Samhita. It enables learners to imbibe the core idea of a phenomenon by comparing with another more familiar object or phenomenon. This types of instructional methods are well established

in the contemporary teaching as instructional analogy. The comparison of *Upamana* with Instructional analogy makes meaningful similarities in between them so that the method of *Upamana* becomes more relevant in contemporary Ayurvedic teaching.



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