Definitions and an Introduction to Higher Viewpoints

I. Definitions
   a. Being able to define gives one a great deal of freedom to order one's own intelligence and to express oneself to others.
   b. Nominal: enough of a definition so as to use the word correctly
      -Not necessarily easy.
      -rare to have adequate verbal/written nominal definitions (most are learned by differenting experiences.
      i. Circle: perfectly round co-planar curve (describing how it looks to the eye)
      ii. Straight Line: a line lies evenly between two extremes (notice line is not defined)
      iii. Try Car
      iv. Try Chair
      v. Happiness
      vi. Courage
      vii. Kingdom, phylum, class, order, family, genus, species
   c. Explanatory: nominal plus an explanatory postulate that gives insight into the object.
      i. A straight line is a line that lies between two extremes and is composed of two right angles.
      ii. Gene: phenotypic expression is define in a nominal fashion (eg. Rough or smooth seeds, tall or short plants, green or brown eyes, attached or unattached earlobe). Genotype as the "explanation" of the phenotype is a postulate. Notice that only some "phenotypic" expressions are relevant.
   d. Implicit Definition: The postulate by itself. Expresses just the relational element. Opens isomorphism.
      i. Two points define a straight line and a straight line is defined by any two points.
      ii. Points (position without magnitude, any x,y)
      iii. Genetics: moving from genotype to phenotype to gene-protein (opens up great expanses of exploration beyond the limited range of phenotypic possibilities).

II. From Insight to Explanatory/Implicit Definitions
   a. Circles on page 37
   b. Galileo's proportions relating distance and time in a falling object.
   c. Newton's gravitational equations (more abstract and more explanatory)
   d. Dalton's proportions and definitions of Atoms.
   e. Algebraic rules
   f. Calculus
   g. Biology (reshaping the "experience" using biochemistry/molecular biology) (genetics)

III. Implicitly Defining Insight

a. Lonergan is implicitly defining experience-inquiry-insight-conception. (self-appropriation fills out these terms). Fixed elements (terms and relations), variable elements (content of the terms).

IV. The formation of a viewpoint: insights that "combine, cluster, coalesce, into the mastery of a subject"—results in applications to larges ranges of instances.
   a. A view point can form into a "system"—eg arithmetic, the periodic table, etc.
   b. The growth of a viewpoint
      i. Positive integers (1+1=2, 2+1=3, 3+1=4, etc., etc., etc.)
      ii. Deductive expansion (highlight equality, addition tables)
      iii. Homogeneous Expansion (vast extension of the deductive expansion)
         1. addition-subtraction
         2. multiplication-division
         3. powers-roots
   c. The problem
      i. Negative numbers
      ii. Fractions and surds
      iii. Multiplication of negatives
      iv. Division with negatives
      v. Subtraction of negatives
   d. The Emergence of a higher viewpoint
      i. The image—doing arithmetic
      ii. Discovering patterns in arithmetic
      iii. Defining those patterns.

V. Successive higher viewpoints
   a. Arithmetic—algebra—calculus
   b. Physics—chemistry—biology—human sciences

VI. Symbolism: definitions are symbolically expressed, and this becomes important for the formation of experiences which lead to further insight.
   a. Roman numerals
   b. Dy/dx
   c. Biochemistry/molecular biology