

St. Thomas Aquinas on Education and Instruction

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THE TERM *education* as it is used now concerns the more basic and general modeling of the mind and behavior of the young, as it is dispensed by the parents at home, at primary and secondary schools, as well as during the first years of study at liberal arts colleges. More specialized training in the sciences is often called instruction.

St. Thomas on Education and Instruction

While in our modern language the difference between education and instruction is not always stressed and one can speak of continuing education of adults who attend refresher courses at colleges or summer schools, St. Thomas restricts the meaning of *educatio* to the first stages of the upbringing of children, whereas the content of later training is expressed by such terms as *instructio*, *disciplina*, and *doctrina*.¹ When stating that the good of the offspring is the end of a marriage, he points out that giving life to children is only part of this good: education and instruction also belong to it. During the first years of an infant's life the role of the mother will be preponderant, but later the father has an important task.² From the fact that both parents are needed,³ he deduces that a marriage

¹ *Quodlibet* II, q. 5, a. 1: "Debet enim pater filio non solum educationem sed etiam disciplinam, ut Philosophus dicit"; cf. *Summa theologiae* I–II, q. 100, a. 5, ad 4, etc.

² *De malo*, q. 15, a. 1: "Postea ad patrem pertinet educare filium et instruere eum et thesaurizare ei in totam vitam."

³ *In IV Sententiarum*, d. 27, q. 1, a. 1: "Requiritur sollicitudo utriusque."

must be indissoluble.⁴ If the basic education is the task of the parents, others can assist them. As the birth of a child is facilitated by a midwife, schoolmasters also help in the education.⁵ The role of education in our everyday life has been transposed to the spiritual level: God adopted Israel, cared for its growth (that is, education), and exalted it,⁶ and, in a Christian perspective, we say that God created us, liberated us, and educated us.⁷

The terms *instructio* and *instruere* are frequent in the works of Aquinas. The instruction of children must be continued over the years, until they are fully grown.⁸ This instruction comprises teaching the simple things of daily life which a child when growing up must know, a basic formation in the liberal arts, sometimes a craft, but it has to do also with behavior and ethics. It aims at communicating knowledge and at directing the young to a good moral life.⁹ It comprises discipline and, where necessary, punishment. In addition, students may receive a special instruction in particular professions as well as in the sciences and philosophy.

As is to be expected *instructio* is frequently used by Aquinas to signify the communication of divine truth in revelation, the teaching of Moses, the prophets, Christ, and the apostles. God revealed everything man needed to know in order to allow him to reach his true destination, but he did not reveal everything to everyone.¹⁰ To reveal the invisible realities God uses the properties of visible things.¹¹ The incarnation of His Son is the summit of this teaching, for now man could receive this instruction from God himself in a human way.¹² In countless texts Aquinas quotes the saying that whatever Christ did and worked is to our instruction.¹³ Christ came into the world to teach and to work miracles in view of the salvation of man.¹⁴ His work was continued by the apos-

⁴ ST II-II, q. 154; *Summa contra Gentiles* III, c. 122. Cf. *In IV Sent.*, d. 33, q. 2, a. 1: "Matrimonium ex intentione naturae ordinatur ad educationem proles, non solum per aliquod tempus sed per totam vitam proles."

⁵ ST III, q. 67, a. 7, ad 2.

⁶ *In Isaiam*, c. 1, l. 2.

⁷ *Sermo dominicalis* 1.

⁸ *In IV Sent.*, d. 33, q. 1, a. 3A: "Quousque proles ad perfectam aetatem ducatur"; *ScG* III, c. 122: "Post longum tempus . . . ad annos discretionis."

⁹ *In Coloss.*, c. 3, l. 3: "Instructio duplex, ad cognoscendum verum; ad cognoscendum bona."

¹⁰ ST II-II, q. 171, a. 4, ad 1: "Non tamen omnia omnibus".

¹¹ *In II Sent.*, d. 8, q. 1, a. 3. Cf. *ScG* IV, c. 55.

¹² *ScG* III, c. 154: "Secundum modum humanum."

¹³ ST III, q. 40, a. 1, ad 3 *passim*: "Actio Christi fuit nostra instructio."

¹⁴ ST III, q. 44, a. 1, ad 1: "Ad hominum scilicet utilitatem et instructionem".

ties and their successors. Those who received this divine revelation—the prophets and the disciples of Jesus—had to make it known also to future generations and, therefore, to put it into writing so that it would remain unchanged and pure in its original truth. This implies furthermore that there must be some institution empowered to interpret these texts.¹⁵ But besides this special instruction God instructs man also by the created things he made, which witness to Him,¹⁶ and this instruction through man's natural reason is sufficient to acknowledge the Creator.¹⁷ Furthermore, many events in man's life, in particular catastrophes and suffering, are a powerful reminder of his own weakness and of his final destination, and so contribute to his education. Considering created things is helpful for the instruction in the Christian faith,¹⁸ although there is a discontinuity between the natural and supernatural orders: however much one is instructed in the sciences, one will never arrive at knowing the things of the faith by one's own natural powers.¹⁹

There are several levels of Christian instruction: catechesis before baptism; the instruction given on the occasion of the administration of the sacraments and the instruction on how to lead a Christian life; finally, the instruction on the profound mysteries of the faith and Christian perfection.²⁰ In order to be instructed by the Church in the faith one's intellect must be well disposed and one's will and sense powers must be open to love.²¹ St. Thomas finally speaks of an instruction of the mind by the angels, who can propose certain objects to our mind by means of images in our imagination and can also reinforce the light of the human intellect.

Docere: Teaching as a Privileged Form of Instruction

By *docere* St. Thomas understands proposing to other persons the scientific knowledge one possesses. In several of his works he explains in detail the process of teaching. There is, indeed, a special problem in the transmission of knowledge: Is such a transmission possible because there is a continuity or even a unity between the mind of the disciple and that of the teacher? Or is teaching something like the communication of a quality, such as the heat of a stove which is spreading in the surrounding room? Or do we already have all knowledge from the beginning hidden at the

¹⁵ ScG III, c. 154.

¹⁶ In *Psalmum XVIII*, n. 5.

¹⁷ In *Job*, c. 33: "Deus unicuique sufficienter loquitur ad eius instructionem."

¹⁸ ScG II, c. 2: "Consideratio creaturarum utilis est ad fidei instructionem."

¹⁹ In *III Sent.*, d. 14, q. 1, a. 3, A, ad 2.

²⁰ ST III, q. 71, a. 1, ad 3.

²¹ In *1 ad Corinthios*, c. 2, 1.1.

back of our minds, so that learning is only a becoming aware of what one already knows? In the *Quaestiones disputatae De Veritate*, q. 11, a. 1, the *Summa theologiae* I, q. 117, a. 1, the *Summa contra Gentiles* II, c. 75, and some other texts, Aquinas mentions the philosophical opinions which underpin these theories. There is in the first place the theory according to which all concepts of sensible things come to us from outside our sublunar world, for instance from a general agent intellect, so that whatever happens in the sense faculties is no more than a preparation of the sensory substrate for these concepts. This theory is that of Avicenna, as St. Thomas explains in the *Scriptum super III Sententiarum* and elsewhere.²² According to Avicenna an intellect located on the outer circle of the sublunar world would infuse in each of us our concepts (*dator formarum* theory). Other authors, however, asserted that all concepts are already present in us, but are made manifest by the operation of outside agents, in analogy to the theory of Anaxagoras who said that all things are present in a piece of wood, a living being, or in any material substance. In a similar way John Damascene appears to have held that the virtues are naturally present in us. The theory of the inborn ideas is Platonic: coming to know something is no more than remembering what the soul had already seen in the world of ideas before it came into the human body.

Thomas rejects both views: the first excludes all proximate causes and so demolishes a cosmic system where things are connected by an order of causality; the second opinion boils down to practically the same: some secondary conditions are the cause that concepts or the virtues are brought to our attention. The solution of the difficulties lies in a more elaborate theory of actuality and potentiality. Natural forms pre-exist in material things potentially and must be brought to actuality by an outside agent. Not only the Primary Cause can do so, but also created agents. The same can be said of the virtues, since they pre-exist in our natural inclinations only in a state of potentiality and must be actualized by actions in conformity with what virtues are inclined to.

This applies also to the way in which scientific knowledge is acquired: certain seeds of it pre-exist in us, namely, the first concepts of the intellect which we come to know immediately by means of cognitive species which, with the help of the agent intellect, are abstracted from the sensory representations. This holds true also of the first statements (principles) which are grasped spontaneously. All further principles are derived from these first as from their seeds. The intellect acquires scientific knowledge when it comes to know particular truths which it first knew

²² In *III Sent.*, d. 33, q. 1, a. 2, q. 1.2, sol. 2; *De virtutibus in communi*, a. 8.

only in potency and in some general way. But this explanation must be refined: something can exist in a potential state in a dual way—in a fully equipped active potency, which is by its own power able to bring itself to full actualization (a sick person may become healthy by the natural forces of his body), and in a passive potency, when the intrinsic principle is not sufficient to bring about actualization (a volume of air or a piece of wood does not catch fire by itself). In the first case an outside agent will only function as an auxiliary cause, as a physician who gives some medicaments to a patient is an auxiliary of nature. But when something pre-exists only in passive potency, an outside agent must reduce it from potency to actuality, as heat applied to a piece of wood will ignite it. Scientific knowledge pre-exists in us in the first manner. Else one would not be able to acquire it by oneself, as nevertheless some persons have managed to do.

However, Thomas goes into greater detail as to the way in which people can acquire knowledge by insisting on an analogy with the manner in which one can be cured: a sick person may be cured by his own physical powers; in a second way, by means of medicaments. Likewise it is possible that one acquires this knowledge all by oneself, and so he discovers things himself. In another way when he needs the outside help of a teacher becoming his disciple. In processes which happen by natural forces and in those which are caused by human work the same means are used. One can be healed in a natural way just by warm weather. Similarly a doctor may apply heat to the body in order to cure it. This is also the case in the process of learning, either by oneself or with the help of an instructor who proceeds in the same way as a person who seeks to gain knowledge by himself. This process is as follows: one applies general principles, evident by themselves, to determinate subjects, then draws some conclusions about particular things and goes on to the next question. He who is teaching someone will do the same: by means of sensible signs he manifests and conveys the process of reasoning taking place in himself. The disciple will then arrive at these conclusions with the help of the tools the master or teacher proposes to him. Just like a physician uses the natural forces of his patient's body, a teacher addresses himself to the intellect of his student. This process is called "teaching" (*docere*).

In this whole passage²³ St. Thomas is dealing with *scientific knowledge*, understood as strictly demonstrative knowledge, which makes use of syllogisms to engender certitude. But one may propose to a student facts which are not included in the principles known as evident by themselves.

²³ In the *De veritate*, q. 11 and the other texts referred to above.

An example is the knowledge of facts as proposed in teaching geography and history. These facts are not contained in the first principles, but one may judge that they are in agreement with them. Before turning to a discussion of the numerous difficulties raised in the first part of this article, St. Thomas reminds the reader that, in a sense, God must be said to be our master and teacher, since He endows our mind with its intellectual light.

In his answer to the third difficulty Aquinas explains that when the teacher uses sensible signs to evoke concepts and statements, the disciple must have some knowledge of the things these signs are about, although he ignores other aspects of them. If one explains to us what “man” means, we must have an idea of what a living being or a substance, or something at least existing as such, is. If a teacher wants us to understand an argument, we must know what the subject and predicate of the concluding statement mean and also know the principles on which the conclusion is based. The process of teaching is quite different from a simple transferring or pouring one’s knowledge into the mind of someone else. By proposing certain signs the teacher helps the mind of his pupil to form concepts of these things.

In the *Summa contra Gentiles*²⁴ Aquinas adds some further explanations. The scientific knowledge which the teacher calls up or produces in his student is numerically the same as his own with regard to the contents of what is known, but not in respect of the intelligible species. The work of a person who teaches can be compared to what one does in the arts. Teaching resembles what a medical doctor does when curing a patient: he makes use of what the natural processes in the patient tend to do, strengthening and supporting them. In this way a teacher follows the road a person himself takes when working to acquire knowledge, that is, by presenting to the student the evident principles. As a matter of fact, as Aristotle writes in the *Posterior Analytics* I, chapter 1, all knowledge comes about from pre-existing knowledge. The next step is to lead the student to see the conclusions which follow from the principles. The teacher helps the student by proposing examples which he can apprehend with the senses so that his imagination can form the images needed for intellectual knowledge.

In the *Summa theologiae*²⁵ St. Thomas revisits the same subject matter:

²⁴ ScG II, c. 75.

²⁵ ST I, q. 117, a. 1.

²⁶ As it was understood on the basis of the Latin translation of his works.

²⁷ This is the so-called *intellectus possibilis*, the intellect which has the concepts and forms judgments, not the *intellectus agens*, which according to St. Thomas trans

Can a person communicate knowledge to someone else? Recalling the theory of Averroes,²⁶ according to which there is one universal intellect²⁷ of all men, so that in principle all concepts are in a common intellect, Thomas points out that in this view one only has to acquire the corresponding sense impressions in order to be connected with the thoughts in this super-intellect, so that there is not much left to do for a teacher. At best, he can bring someone else to arrange his sensible representations so as to be disposed to share the same thoughts. What is true in this view is that the contents of the scientific knowledge in the master and his disciple are the same, but the theory that there is one common intellect of all men is false. We should notice that in this text St. Thomas no longer mentions Avicenna. Indeed, for the purpose of the argument a reference to Averroes's theory is more to the point.

The other opinion mentioned is that of Plato, who assumed that the human soul enters the body equipped with ideas it brings with it from a previous existence near the world of the ideas. This theory implies that a disciple cannot really acquire any new knowledge from his master. The latter can only invite him to become aware of what is already stored in his mind. But St. Thomas has previously shown that this theory is wrong: not only is the explanation of our ignorance by oblivion utterly improbable, but experience also shows that we begin our intellectual itinerary with a blank mind, so that over the years we must acquire knowledge.²⁸ The reasonable explanation of learning is that which draws on the theory of actuality and potentiality. Certain effects are produced in a subject entirely by the efficiency of an outside cause which reduces the subject from potency to act, without any cooperation by this subject itself (for example, the imposing of a form on a lump of clay). Other effects in a subject, however, are sometimes caused by an external agent, sometimes by the subject itself: it happens that a sick person is cured by natural processes in his own organism, but on other occasions he recovers his health with the help of medicaments. In the latter case the art of medicine imitates nature.²⁹ Furthermore, the external agent is not the main cause, but assists the organism.

forms the sensitive representations of the imagination to impress on the possible intellect the intelligible species, the starting point of the formation of concepts and of thought.

²⁸ See *ST I*, q. 79, a. 2, and q. 84, a. 3 and a. 4.

²⁹ The moderns would say: medication liberates natural forces or strengthens certain processes in the body.

³⁰ A master is not absolutely necessary. One can also acquire scientific knowledge by one's own efforts. Cf. *In II De anima*, l.11.

Now scientific knowledge can be acquired by man himself, as is evident in the case of people who themselves discover scientific knowledge.³⁰ This is possible because regarding the first principles everyone has a basis for scientific knowledge of the first principles. He then applies these principles to particular facts, which he observed with the senses. In this way he acquires scientific knowledge of what at first he did not know. An instructor or teacher follows the same way: he leads the disciple from what he already knows to the knowledge of what he does not yet know, (a) by presenting less general principles (which the disciple can understand and evaluate on the basis of the first principles he knows) or by proposing concrete examples;³¹ (b) by helping a disciple to proceed correctly in the process of thinking, by showing the relation of principles to the conclusions which can be drawn from them—a relation which the student himself would not have been able to see. The upshot is that a teacher provides only some support from outside, but that the natural light of the disciple's intellect is the main cause of learning.³² In *De spiritualibus creaturis*³³ St. Thomas explains that the thing known (*res cognita*) can be the same in the mind of the teacher and in that of his student, but that their respective acts of thinking are not identical.

This somewhat shortened version of a text of the *Summa theologiae* completes the exposé of the *De veritate* on some points. Scattered over the works of St. Thomas we find additional observations on teaching. Obviously a teacher must possess the scientific knowledge he intends to communicate to a disciple.³⁴ A sign that one really possesses scientific knowledge is that one can teach and produce in a disciple knowledge similar to that which one has oneself.³⁵ However, in the course of time a teacher can advance in knowledge and discover new truth. A student can also make progress. In fact, a master does not propose all he knows to the student from the very start, but gradually unfolds the subject matter he is teaching.³⁶ A student must be open-minded and welcome from the beginning what the master tells him, even if he cannot fully comprehend everything: perfect understanding will come later.³⁷

³¹ A student who can grasp the truth as it is proposed by his master has a sharper mind than one who needs many sensible examples (*ST* II–II, q. 174, a. 2).

³² A similar explanation is found in the *De spiritualibus creaturis*, a. 9.

³³ *De spiritualibus creaturis*, a. 9, ad 6.

³⁴ *ScG* I, c. 13.

³⁵ *In I Metaphysicorum*, l. 1.

³⁶ *ST* II–II, q. 1, a. 7, ad 2.

³⁷ *ScG* III, c. 152: "Quando iam edoctus fuerit, eas (sc. conceptiones magistri) poterit intelligere." His attitude is that of *docilitas*.

³⁸ *ST* II–II, q. 124, a. 3, and III, q. 67, a. 2.

St. Thomas has a high view of the task of teaching: he who teaches benefits many, and to teach is to render the students more perfect.³⁸ Teaching others the truth is to be considered a sort of spiritual almsgiving.³⁹ He even quotes a text of Dionysius, who says that teaching is sanctifying one's students.⁴⁰ There are also ethical requirements: the teacher must faithfully and zealously do his work.⁴¹ His words must be carefully measured so that he does not inflict any harm on the students.⁴² He may never teach anything contrary to the truth, but must present his doctrine according to what is fitting to a particular audience and in a particular time.⁴³ When he sees that a student cannot follow him, he must make some distinctions and multiply examples.⁴⁴ Finally, the relationship between a teacher and his students should be that between friends in a virtuous friendship. Students must be grateful: what they received cannot be measured in money. They should show lasting gratitude and respect, as they do to their parents.⁴⁵ In another text he writes that a student must respect his master as an employee respects his employer or a soldier his commanding officer.⁴⁶

The Order to Be Observed in Teaching Theology and the Philosophical Disciplines

In his preface to the *Summa theologiae* Aquinas notes that *in teaching theology* a definite order must be observed in which its different parts are treated, but that this order is not always followed by every master. Often beginners are confused because of the multiplication of useless questions, so that in the *Summa theologiae* he wants to avoid this obstacle. Furthermore, a teacher must not lose the thread of his exposé because of unexpected problems which are brought forward;⁴⁷ he should not needlessly repeat things, or follow text books which are not well ordered and create confusion. The *Summa theologiae* is an unsurpassed example of the order of subjects a master should observe when teaching theology. Different attempts have been made to reconstruct Aquinas's leading thought in writing his text. According to M.-D. Chenu, the Neoplatonic scheme of *exitus*

³⁹ ST II-II, q. 43, a. 7.

⁴⁰ In *De divinis nominibus*, c. 3.

⁴¹ In *Romanos*, c. 12, l.2.

⁴² *Expositio in Boetii De Trinitate*, q. 2, a. 4, 1.

⁴³ ST II-II, q. 43, a. 7.

⁴⁴ *De veritate*, q. 9, a. 5.

⁴⁵ In *IX Ethicorum*, lesson 1.

⁴⁶ ST II-II, q. 103, a. 4.

⁴⁷ ST I, proemium: "Secundum quod se praebebat occasio disputandi."

⁴⁸ M.-D. Chenu, *Introduction à l'étude de saint Thomas d'Aquin* (Paris: 1954), 255ff.

and *reditus* would have been decisive for the composition of the three parts of the famous book.⁴⁸ Since God is the essential theme of theology, whatever is discussed (creation, man, human acts, sin, the incarnation, redemption, and glorification), is considered from the point of view of God and in relation to Him.⁴⁹ The First Part considers God himself and created things such as they have been made by Him. The Second Part studies man's return to God, his last end and his beatitude. Whereas the angels could attain their end by one act of their will, man must struggle over the years performing a great number of acts to do so. St. Thomas considers man's acts as they must be seen in the light of his nature, created by God; he treats sin and the special help man receives to reach his end: the virtues, the law, and divine grace. Next the supernatural virtues and their counterparts, the vices, are studied in detail. While Part One of the *Summa theologiae* gives the objective facts about God, creation, and man, Part Two considers the answer man must give to his being called by God, the means at his disposal, and the difficulties he encounters. The Third Part of the *Summa theologiae* treats the particular way which sinful mankind must follow to reach God, namely Jesus Christ. This scheme is simple and allows us to consider all relevant subjects from the viewpoint of God and to integrate into theology the history of salvation, which begins in the heart of God and finds its achievement in the eschatological fulfillment of man and the world.⁵⁰

This order is biblical rather than Neoplatonic. Sacred theology transcends any philosophical scheme. The Bible proposes divine revelation in this order: God; creation; man, who, despite all the gifts he receives, sins and gets himself into innumerable difficulties and a hopeless situation. But the Son of God comes to liberate and rescue him.⁵¹

In teaching the different *philosophical* disciplines a particular order must be observed. According to Plato this order is given with the division of reality as appears from the passage of the "divided line" in Book VII of the *Republic*. Plato proposed a tripartition of reality: sensible things in motion, unmoved mathematical objects, and the world of pure forms or ideas. From this tripartition it is only one step to the division of the theoretical sciences in Aristotle's *Metaphysics* VI, chapter 1. After Plato's death a division of

⁴⁹ ST I, q. 1, a. 7: "Omnia autem pertractantur in sacra doctrina sub ratione Dei, vel quia sunt ipse Deus, vel quia habent ordinem ad Deum ut ad principium et finem."

⁵⁰ O. H. Pesch, "Um den Plan der *Summa theologiae* des hl. Thomas von Aquin," *Münchener theologische Zeitschrift* 16 (1965): 128–37.

⁵¹ See A. Hayen, *Saint Thomas d'Aquin et la vie de l'Église* (Louvain/Paris: 1952).

⁵² St. Augustine ascribed it to Plato, although it probably was formulated in the Early Academy and taken over by the Stoics. Cf. *De civitate Dei* VIII, 4: "Proinde Plato utramque iungendo philosophiam perfecisse laudatur quam in tres partes

philosophical disciplines in physics, logic, and ethics became widespread.⁵² This division influenced the respective positions of Isidorus, Alcuinus, and others, but in later ages Aristotle's division into practical and theoretical sciences and the subdivision of the latter into physics, mathematics, and metaphysics/theology was accepted by many.⁵³

One of the problems under which the twelfth-century authors labored was that of the precise relation between the liberal arts and the theoretical sciences. Historically the school curriculum comprising the seven arts, which played such an important role in medieval education, was prepared by the Sophists.⁵⁴ But the systematic study of the seven liberal arts seems to have originated in Alexandria. The scheme appeared for the first time in the first century B.C.⁵⁵ St. Thomas studied grammar and logic in Naples under Master Peter of Ireland, who begins his commentary on the *Isagoge* with a division of the sciences. In his *Expositio in Boetii De Trinitate*⁵⁶ St. Thomas writes that the division into seven liberal arts is inadequate as a division of theoretical philosophy. He does not even enumerate the arts of the trivium and quadrivium, but vindicates the independence of philosophy, establishes the distinction between theoretical and practical sciences, and explains the nature of each of these. In the Faculty of the Arts of the University of Paris, philosophy came to dominate more and more; the arts were seen as merely preparatory.

Mathematics, however, constitutes a problem: Aristotle places it between physics and metaphysics, whereas traditionally arithmetic and geometry are placed among the liberal arts. St. Thomas does not seem to rank mathematics among the philosophical disciplines, for in his commentaries on the *Physics* and the *Metaphysics* he does not attach much importance to mathematical considerations about the structure of the universe. But he does say that young students can more easily learn mathematics, since mathematical objects are abstracted from sensible things,

distribuit: unam moralem, quae maxime in actione versatur; alteram naturalem quae contemplationi deputata est; tertiam rationalem qua verum determinatur a falso."

⁵³ It had been taught by Boethius and Cassiodorus. See the latter's *De artibus ac disciplinis litterarum*, PL 70, 1167.

⁵⁴ Hippias is reported by Plato, *Protagoras* 318E, to have taught arithmetic, geometry, astronomy and music (the so-called quadrivium).

⁵⁵ See H.-I. Marrou, "Les arts libéraux dans l'antiquité classique," in *Arts libéraux et philosophie au Moyen-Âge. Actes du quatrième congrès international de philosophie médiévale* (Paris: Vrin, 1969), 5–27, at 8ff.

⁵⁶ *Expositio in Boetii De Trinitate*, q. 5, a. 1, ad 3.

⁵⁷ In *VI Ethic.*, lesson 7: "Rationes mathematicorum sunt rerum imaginabilium, sapientialia autem sunt pure intelligibilia. Iuvenes autem de facili capere possunt quae sub imaginatione cadunt."

and so their forms are represented by the imagination.⁵⁷ The young can easily understand what is abstracted from sensible things but experience some difficulty in considering what leaves the sensible aspects of things entirely behind. Moreover, the young, when studying difficult and abstract subjects, are often hampered by their impetuosity and turbulent activity.⁵⁸ For this reason the study of ethics and metaphysics should be taught to those who have become more sedate and have acquired a greater experience of the principles underpinning human actions.⁵⁹ Certain students, however, are by nature and/or by practice and habituation more open to the study of philosophy.⁶⁰

Apparently the order in which the philosophical disciplines should be taught is the following: first a training in logic, which has a preparatory role.⁶¹ It is the art which allows us to make a correct use of our reason in thinking and arguing. Our intellect can direct our faculties, but it can also order and direct its own activity. Logic helps us to proceed in an ordered way and to avoid errors.⁶² Next follows the study of nature, which also comprises philosophical anthropology. An interesting point is that according to Aquinas the most valuable conclusion we reach in this discipline is that of the immateriality of the human mind and soul. In its turn, this conclusion is the stepping stone to enter metaphysics: when we have discovered that not every being is material, we are entitled to reflect on the (material) things which surround us in abstraction from their materiality, and so the study of being qua being has become possible.

As to ethics, it should be taught to those who are mature and have some experience of human life. Commenting on what Aristotle writes in his *Nicomachean Ethics*, St. Thomas notes that those who cannot understand what their teacher says cannot assimilate the subject matter. This applies to civil and social ethics.⁶³ On the other hand, they can study mathematics and the sciences.⁶⁴ However, we must keep in mind that Aristotle's view

⁵⁸ Cf. G. P. Klubertanz, "St. Thomas on Learning Metaphysics," *Gregorianum* 35 (1954): 3–17.

⁵⁹ *In VII Physicorum*, lesson 6.

⁶⁰ *In VII Physicorum*, lesson 6, n. 925 (7): "Quia multa perturbatio et multus motus est circa ipsos iuvenes," but this unrest may quiet down either by natural factors (for example, aging) or "ab exercitio et consuetudine."

⁶¹ *In I Metaph.*, l. 1, n. 32.

⁶² *In I Analytica posteriora*, lesson 1.

⁶³ *In I Ethic.*, c. 2, lesson 3, n. 38: "Iuvenis non est conveniens auditor politicae et totius moralis scientiae quae sub politica comprehenditur."

⁶⁴ *In VI Ethic.*, lesson 7, n. 1208.

⁶⁵ Aristotle, *Ethica nicomachea*, 1103b27: ethics does not aim at giving us knowledge but at making us virtuous persons.

of ethics differs somewhat from that of Aquinas. For Aristotle ethics is an exclusively practical science,⁶⁵ in which the virtue of prudence plays a predominant role. It is obvious that most young people do not yet possess this virtue. St. Thomas, on the other hand, weakens the statement that ethics is totally practical and also stresses that it aims at conveying knowledge, although not exclusively so.⁶⁶ This implies that the principles on which our moral life rests can be taught to younger people who are perhaps more prone than adults to follow their instincts and passions.⁶⁷

In his introduction to the commentary on the *Nicomachean Ethics*, St. Thomas considers human intellectual work from the viewpoint of order. Order is twofold: that of the parts of a whole to each other, and that of beings and actions to their end. The latter is more important. Now there is an order which man does not make but only considers, as he does in the natural sciences. A second type of order is established by our reason in its own work, that is, in thinking and reasoning. A third order is that imposed by reason on the acts of our will; a final order is that which man brings about in his external work, such as in building, cultivating the land, and in the fine arts. In this way Aquinas presents a grandiose ideal to any teacher, instructor, and master, namely, to help the disciples and students to bring about the order of reason in their experience and perception of the surrounding world, in their own thinking and reasoning, in their behavior, and, finally, in the seal of reason they impress on things and their transformation.

The Methods to Be Used in the Teaching of the Different Sciences

The question of the method to be used in the study of a science had considerable importance for St. Thomas. He not only examined (in his commentaries on the works of Aristotle) which is the method the Stagirite used in a particular text, but he also devoted several pages of his Aristotelian commentaries to questions of methods to be used and presented a fairly complete treatment of these methods in the last question of his *Expositio in Boetii De Trinitate*. As Aristotle himself indicated, the methods vary according

⁶⁶ *In I Ethic.*, lesson 3: "Finis enim huius scientiae non est sola cognitio ad quam forte pervenire possunt passionum sectatores, sed finis huius scientiae est actus humanus, sic ut et omnium scientiarum practicarum."

⁶⁷ Cf. *In IV Ethic.*, c. 15, l. 17, n. 872 ("Quia scilicet iuvenes propter fervorem aetatis vivunt secundum passiones") and *In VIII Ethic.*, l. 3, n. 1571 ("Vivunt secundum quod feruntur a passionibus"). Now, the text quoted in note 65 says that even those who follow their passions may be able to assimilate the theoretical part of ethics.

⁶⁸ Cf. Aristotle, *Nicomachean Ethics*, 1094b22–27, and *Ars rhetorica* III, c. 1.

to the subject matter studied.⁶⁸ Although Aristotle does not appear to have written a treatise on the methods to be used in the different sciences, he was not unaware of the problem. In his works one can find scattered remarks on how to proceed in the various sciences.⁶⁹ In *Physica*, chapter 2, he describes the method to be used in natural philosophy. In the *De partibus animalium* and in the *De caelo*,⁷⁰ he points out that we must first collect the facts (the phenomena) and then discover the theory which accounts for them.⁷¹ In general his position is that we proceed from what is best known to us to what is less so.⁷² Repeatedly he stresses the distinction between the method which argues from the causes to their effects (*propter quid*) and that which goes from the effects to their causes. In his short treatise *De Trinitate*, Boetius has some remarks on the methods to be used in the philosophical disciplines, remarks which were to some extent taken over and exploited in the following ages.⁷³

Turning now to St. Thomas Aquinas, one can say that his fundamental method in all scientific studies is that of an openness to reality—a careful consideration of things and the strict submission of one's intellect to what one observes, without any interference on the side of one's imagination. In a next step, this general methodological attitude is further determined according to the subject matter of the different disciplines. In his commentary on the *Physics* of Aristotle, presupposing observation of the visible world as the starting point, he explains that one must proceed studying the causes and principles of things and events. While the mathematical disciplines study only the formal cause, the philosophy of nature examines the four causes of the phenomena. The reason is that it studies things subject to change; now, the four genera of causality are involved in generation and in movement. With regard to the study of the principles, one must study first the most universal among them, since they contain

⁶⁹ Cf. J. Burnet, *The Ethics of Aristotle* (London: 1900), introduction, xxxi ff.; W. Jaeger, "Aristotle's Use of Medicine as a Model of Method in his Ethics," *Journal of Hellenic Studies* 77 (1957): 54–61; J. Donald Monan, *Moral Knowledge and its Methodology in Aristotle* (Oxford: Clarendon Press, 1968), *passim*.

⁷⁰ *De partibus animalium*, 639b5–10; *De caelo*, 306a5–17.

⁷¹ See W. D. Ross, *Aristotle's Physics*, 456–58; G. E. L. Owen, "Τιθέναί τα φαινόμενα," in *Aristote et les problèmes de méthode* (Louvain: Presses Universitaires de Louvain, 1961), 83–103; J.-M. LeBlond, *Logique et méthode chez Aristote* (Paris: Vrin, 1970).

⁷² Cf. St. Thomas, *In I Ethic.*, lesson 4: "Oporteat incipere a magis cognitis, quia per notiora devenimus ad ignota."

⁷³ On his sources and the subsequent medieval discussion, see L. Elders, *Faith and Science. An Introduction to St. Thomas's Expositio in Boetii De Trinitate* (Roma: Herder, 1974), 85–90.

⁷⁴ *In I Physicorum*, c. 1, lesson 1.

the more determinate principles. We acquire the knowledge of the principles by means of an analysis or reduction.⁷⁴ A good example of this way of proceeding is the analysis of the generation and corruption of material substances which leads us to conclude that bodies are composed of primary matter and substantial forms.

In his *De Trinitate*, question 6, Boetius writes: “In naturalibus igitur rationabiliter, in mathematicis disciplinabiliter, in divinis intellectualiter versari oportebit, neque deduci ad imaginationem, sed potius ipsam inspicere formam.” St. Thomas explains the *rationabiliter* of Boetius as characterizing the ordinary, natural manner of thinking of the human mind. In fact, we proceed from the knowledge of sensible things, and go from there to that of intelligible realities which for us are less knowable, although they are more cognizable in themselves. In the second place, it is proper to the human mind to reason from one thing to the next. This is very obviously what is done in the natural sciences, for we proceed from the knowledge of effects to that of their causes, and that in a twofold way: (a) analyzing a general essence (for example, “animal”) to establish its properties or the different species contained in it; in this analysis one does not consider extrinsic causes; (b) reasoning at the level of extrinsic causes and explaining or demonstrating a thing or an event by individuating its cause which is wholly external to it. Now this second way of proceeding is particularly characteristic of natural philosophy. Although in the first part of the philosophy of nature we follow mostly the method (*modus*) indicated in (a), namely resorting to the analysis of the intrinsic causes, in the subdivisions of the particular philosophy of nature according to the three species of movement,⁷⁵ we look for extrinsic causes, while in the study of living beings, the approach by means of intrinsic causes is again very much present. In the analysis or reduction (*resolutio*) we must keep in mind that arguments which conclude from effects the existence of their proper causes are certain. However, we cannot always be certain when arguing from the cause to its effect, since the causal action can be interfered with or the subject ill-disposed to undergo this causal influence. In a reduction one arrives first at the most general causes, later at the more particular causes. In his search of the causes of things and processes, the philosopher also resorts to the final cause of things and events.⁷⁶ Since he knows that nature does nothing in vain, he tries to explain certain things and processes looking for their usefulness. For example, the organs in the body of living beings serve a

⁷⁵ Namely locomotion, qualitative change, and the processes typical of living beings.

⁷⁶ In *II Physicorum*, lesson 11.

purpose. Some have argued that in such cases one supposes finality in nature and that, consequently, the philosophy of nature is based on suppositions more than on total certitude.⁷⁷ But Aquinas uses the word *suppositio* not only in the sense of what we call an assumption or hypothesis, but also in the sense of certain knowledge based on perception.⁷⁸

Boethius uses the term *disciplinaliter* to characterize the method used in mathematics. In his day, *disciplina* denoted knowledge acquired by instruction.⁷⁹ Following Aristotle, St. Thomas argues that mathematics possesses greater certitude than natural philosophy and theology,⁸⁰ since beings considered by it are less complex; one abstracts from movement and sensible qualities to study the quantitative aspect of material things.⁸¹ It yields greater certitude than even metaphysics, since although the latter studies being in abstraction from matter, its starting point is always concrete, material reality. For this reason it is easier to study mathematics, and this discipline should be taught prior to natural philosophy.⁸²

The method in metaphysics is that of reduction (*resolutio*); that is, the metaphysician goes from the consideration of effects to that of their causes, from the less universal to the more universal, from multiplicity to unity,⁸³ and so it may be called an activity of the intellect qua intellect rather than of the intellect *qua ratio*.⁸⁴

With regard to the method to be used in ethics, according to Aquinas one must keep in mind that ethics considers human acts in so far as they are ordered to the end of man. In doing so it adds the connotation of "moral" (or "immoral") to acts which in philosophical anthropology are

⁷⁷ W. Wallace, "St. Thomas's Conception of Natural Philosophy," in *La philosophie de la nature de saint Thomas d'Aquin*, ed. L. Elders (Città del Vaticano: Libreria Editrice Vaticana, 1982), 27.

⁷⁸ *In I Phys.*, lesson 1, n. 18: "In natural science one supposes that material things move, at least some of them."

⁷⁹ See H.-I. Marrou, "*Doctrina et disciplina* dans le langage des Pères de l'Église," *Archivum Latinitatis Medii Aevi* 9 (1934): 5–25; M.-D. Chenu, *Revue des sciences philosophiques et théologiques* 25 (1936): 686–92.

⁸⁰ However, the Latin *certus* is not an exact equivalent of the Greek of Aristotle's text, the source of Boethius.

⁸¹ *Expos. in Boetii De Trinitate*, q. 6, a. 1.

⁸² *In VI Ethic.*, lesson 7, n. 1211.

⁸³ Cf. *In Metaph.*, prooemium; *In II Metaph.*, lesson 1.

⁸⁴ Cf. L.-M. Régis, "Analyse et synthèse dans l'œuvre de Saint Thomas," in *Studia mediævalia in honorem R. J. Martin* (Brugge: De Tempel, 1948), 303–30; L. Oeing-Hanhoff, "Die Methoden der Metaphysik im Mittelalter," in *Die Metaphysik im Mittelalter. Abhand. des 2. intern. Kongress f. mittelalterl. Philosophie*, ed. P. Wilpert (Berlin: De Gruyter, 1963), 71–91. See also L. Elders, *Sobre el método en Santo Tomás de Aquino* (Buenos Aires: Sociedad Tomista Argentina, 1992).

studied from a different viewpoint. However, not all norms and moral qualifications can be deduced from man's last end. There are numerous intermediary ends. In ethics one should proceed by formulating rules of conduct on the basis of the fundamental inclinations of our nature, such as to keep oneself in life and in good health, to live with others in a community, to develop one's knowledge, to respect one's parents and to determine the goal of human life. These first principles of moral life are known immediately. But derived rules are based on experience and rest on a sort of induction.⁸⁵ This induction in ethics is based on what commonly happens, for example, that children suffer when parents have a divorce. Comparing one's actions with a general rule belongs to what St. Thomas calls the *modus compositionis*, a synthetical movement of the mind, which goes from the simple or single to the composite and the whole. This *modus compositionis* concerns above all the work of the virtue of prudence which applies rules to concrete cases. One discovers the goodness of the principles formulated (for example, one must live in a friendly and helpful relationship with others) because of the effects. For example, unstable marital unions impair the education of the children. Therefore, parents should stay together in a peaceful and loving relationship. From experience we also know that neglect of one's health leads to sickness, incapacity to work, and misery, so that it is our duty to take good care of ourselves. In this way experience helps us to formulate rules for our behavior. The secondary principles or rules for our conduct result from a reasoning process; for example, driving a car after drinking too much is dangerous, so we must abstain when we must drive. It is superfluous to say that experience plays a most important role in determining the line of conduct we must follow. However, the road one has to follow may differ according to the persons involved and the circumstances surrounding our actions, so that often total certitude cannot be reached as to what it is best to do.⁸⁶ As appears from the examples, to formulate more particular rules of conduct in agreement with the basic requirements of our nature and our last end it is of decisive importance to possess the virtues. When they are present, a moral judgment about what to do in particular cases will be greatly facilitated. It follows that education for a virtuous life by habituating the young to behave well is paramount, more than scientific instruction about man's duties.⁸⁷ The

⁸⁵ Cf. *In II Ethic.*, lesson 11, n. 137. On the method used in ethics see L. Elders, *De ethiek van Thomas van Aquino* (Oegstgeest: Colomba, 2000), 16–20.

⁸⁶ *ST I–II*, q. 94, a. 4: “In operativis non est eadem veritas vel rectitudo practica apud omnes quantum ad propria.”

⁸⁷ *In I Ethic.*, l. 16, n. 189; *ST I–II*, q. 63, a. 1 and a. 2.

education of the young to virtuous behavior needs the example of parents and teachers. Examples of virtuous behavior impress the young more than words.⁸⁸ If everyone must edify his fellow men by the example of his behavior, this applies even more to those whose life is exposed to the view of all and who are supposed to direct others.⁸⁹ In fact, examples of perfect behavior lead the young to practice the virtues.⁹⁰

At the supernatural level, God revealed himself to the patriarchs and the prophets, and through them he instructed Israel,⁹¹ giving it his Law,⁹² and educating it toward the fuller revelation which Christ was to bring.⁹³ The entire life and all the teachings of Christ are an instruction for us. The entire New Testament presents the doctrine taught by Jesus and his apostles. The grace of the Holy Spirit continues this instruction in the hearts of those who believe in the Son of God.⁹⁴ Christ and the saints⁹⁵ give us an example of how to conduct our lives.⁹⁶ The Church continues to educate and to instruct the Christian people in the doctrine of Christ and to be the teacher of all the nations. Those who are called to educate the Christian people must themselves possess a fuller knowledge of God and his plan of salvation; they must be able to confirm or to prove what they say and explain it in a way adapted to the hearers.⁹⁷ This instruction will be completed in eternal life, when God manifests his innermost being to the blessed,⁹⁸ and so all education and instruction will reach its term.

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⁸⁸ *ST* I–II, q. 34, a. 1: “Magis movent exempla quam verba.”

⁸⁹ *In IV Sent.*, d. 38, q. 2, a. 3, C, ad 2: “Quilibet tenetur ad hoc quod aedificet proximum exemplo suo.” In particular those “quorum vita in exemplum aliorum est posita.”

⁹⁰ *ScG* III, c. 135.

⁹¹ *ST* I–II, q. 105, a. 4.

⁹² *ST* I–II, q. 90, prooemium.

⁹³ *ScG* III, c. 154: “Videmus post Christi incarnationem evidentius et certius homines in divina cognitione esse instructos.”

⁹⁴ *ST* II–II, q. 52, a. 1, ad 3.

⁹⁵ *In III Sent.*, d. 17, q. 1, a. 3: “Sanctorum exempla nos ad caritatem excitant.”

⁹⁶ *Ibid.*

⁹⁷ *ST* I–II, q. 111, a. 4.

⁹⁸ *ST* II–II, q. 171, a. 4, ad 2: “Perfecto autem divinae revelationis erit in patria.”