

## THE FACULTIES IN EDUCATION

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UNDER the secondary school curriculum, the general content of which has been sanctioned by many centuries of tradition, smolders a bubbling and dissatisfied educational psychology. As all philosophy must do, this psychology is expressing itself in practise. General mind training, pure science, Latin, Greek, mathematics, and history are giving way to specific preparation for professions and trades. Modern educators would have us build our curricula upon an analysis of the *specific* activities which the graduate will be expected to exercise in society. "Instead of the standard for judging the value of studies being, 'What training does the child's mind get?' we shall rather ask, 'What is the practical (using the word in its widest meaning) value of the knowledge obtained?'"<sup>1</sup>

The proposition is this. Latin, Greek, mathematics, and other *apparently* impractical subjects have been justified in the school curriculum by their alleged ability to train the intellect, memory, and will. Once these faculties, and the others, are developed, the training, ability and facility to use them efficiently can be transferred to whatever activity the graduate may undertake. This theory that *general* development of the faculties arises from a specific study is termed "formal discipline"; and the theory that this general mental ability will facilitate mastery in any other field is called "transfer of training." On the validity of formal discipline and transfer of training depends the fate of the traditional school curriculum and the growing favor of specifically practical studies.

Some modern educational authorities are satisfied to conclude that experiments have exploded the theory of formal discipline and have badly battered transfer of training. The verdict is, "Training *does not* produce a *general* improvement of memory. Whatever improvement is brought about comes as a result of

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<sup>1</sup> N. Norsworthy, "Formal Training," *New York Teachers' Monographs* IV (1902) No. 4, p. 99

better methods of attention, recall, or recognition."<sup>2</sup> "The power of thinking cannot be trained in the abstract. . . . Thinking power is not an abstract and general power of the mind to be applied equally well in all sorts of situations."<sup>3</sup> "That this doctrine [formal discipline] is peculiarly fitted to satisfy the imagination can scarcely be denied."<sup>4</sup> "Modern laboratory methods in psychology have made possible a solution of the problem of transfer. . . . It was found that the amount of transfer was very small. . . . The view that the doctrine of mental discipline was incorrect and that training in one subject was worthless in all others became prevalent in educational and scientific circles."<sup>5</sup> "Transfer of the 'power to generalize' in a specific situation to the power to generalize in all situations is contrary to the laws controlling mental phenomena as we know them. The case is similar as to memory, attention, perception, observation, judgment, and the like."<sup>6</sup>

The case against formal discipline and extensive transfer of training, however, is still resting on fluctuating experiments. Modern educational psychologists hesitate to dogmatize here, but there is no hesitation in unqualifiedly condemning faculty psychology as the alleged philosophical basis for this so called fundamental educational blunder. "The old-fashioned view of the formal discipline rested, in fact if not in theory, on the foundation of the so-called faculty psychology. . . . Contemporary psychology has little patience with this conception. . . . It should not be assumed, however, that because the faculty psychology is exploded, therefore, the inferences based upon it are all essentially erroneous. They may have other foundations than those on which they were supposed to rest."<sup>7</sup> "The fallacy of faculty psychology is generally admitted. Quoting Griffith, 'Modern psychology knows nothing of faculty psychology'; and Inglis says, 'With the rise of modern psychology, faculty psychology was relegated to the limbo of discarded ab-

<sup>2</sup> Benson-Lough-Skinner-West, *Psychology for Teachers* (New York, 1926), p. 225.

<sup>3</sup> Quoted by E. L. Thorndike, *Educational Psychology*, (New York, 1921), II, 432.

<sup>4</sup> Boyd H. Bode, *Fundamentals of Education* (New York, 1921), p. 168.

<sup>5</sup> Benson-Lough-Skinner-West, *op. cit.*, p. 225.

<sup>6</sup> L. Williams and G. Rice, *Principles of Secondary Education* (New York, 1927), p. 261.

<sup>7</sup> James R. Angell, "The Doctrine of Formal Discipline in the Light of Contemporary Psychology" in *Supplement to Mich. U. Bull., New Series*, Vol. IX, No. 8.

surditities.' . . . It is difficult, if not impossible, to find a modern psychologist or writer on educational topics who is willing or able to present an argument for faculty psychology."<sup>8</sup> "This theory of 'mental faculties' has long been abandoned by the psychologists."<sup>9</sup> Speaking of transfer, Bode says, "We have lived on under the influence of the scholastic psychology and have expected to get education by a kind of magic."<sup>10</sup>

In the light or shadow of all this practise and theory, the present-day scholastic, for his own satisfaction, at least, has a number of questions to answer. What is the scholastic doctrine regarding faculties? According to this doctrine how is knowledge in any field, geometry, for instance, acquired? And how can this training be transferred to improve thinking in another field, English composition, for instance?

First, then, what is the scholastic doctrine regarding faculties? Most attacks on the faculty theory rest fundamentally on a dislike or misunderstanding of scholastic metaphysics and the consequent confusion of the relation between soul and body. Bode, for instance, argues this way: Descartes' extreme dualism was wrong; therefore modern scholasticism is wrong. The purpose here is not to show that Herbart's doctrine of a single faculty, Leibniz's preestablished harmony, Mill's positivism, Spencer's transformed realism, Locke's confusion of image and idea, Bain's psycho-physical parallelism, and the rest, are wrong; but to show that modern faculty psychology does not faint under the experimental findings regarding formal discipline and transfer. Only the barest phases of the faculty doctrine most pertinent to the present question will be given here.<sup>11</sup>

The soul is the substantial form of the human body and, therefore, wholly present in the whole body and in all its parts. "This does not preclude that it develops and exercises its powers and activities in special parts, as in the brain and sensory organs." The faculties or powers of the soul can be localized in the parts of the organism to which their proper operation per-

<sup>8</sup> L. Williams and G. Rice, *op. cit.*, p. 246. (Naturally enough a defense of scholastic psychology will not be found in non-scholastic works. But see Mercier, *op. cit. infra*; *Thomas Aquinas* by M. Grabmann (New York, 1928); *The Philosophy of St. Thomas Aquinas* by E. Gilson (St. Louis, 1924); *History of Philosophy*, Turner, New York, (1903).

<sup>9</sup> Benson-Lough-Skinner-West, *op. cit.*, p. 225.

<sup>10</sup> *op. cit.*, p. 153.

<sup>11</sup> For complete doctrine see works listed in note 8; also Maher, *op. cit. infra*.

tains, as the power of seeing in the organ of sight.<sup>12</sup> All man's operations proceed from the soul. But "if the very essence of the soul were the *immediate* principle of operation, whatever has a soul would *always* have actual vital actions, as that which has a soul is always an actually living thing."<sup>13</sup> The soul must, therefore, have *intermediate* principles of operation, which are called powers or faculties. "As the power of the soul is not its essence, it [the power] must be an accident."<sup>14</sup> The faculties, then, are accidents, not little substances; the soul is not "the parent of numerous little souls, the faculties," as Bode says.<sup>15</sup> If the soul exerts different species of energies—and surely remembering and willing are specifically different—it has the different powers necessary to do so. And contrary to Bode's opinion,<sup>16</sup> the powers of the soul are not subdivided almost *ad infinitum*, but only according to radically and *specifically* distinct energies. There are five genera of powers of the soul: vegetative, sensitive, appetitive, locomotive, and intellectual.<sup>17</sup> The will and the external senses, the internal senses, especially imagination and memory, and the intellect, concern the present question.

Now the question; How, in accord with this doctrine, is knowledge in any field acquired? All knowledge begins with the external senses. The theories of formal discipline and transfer of training, however, are especially concerned with those faculties only which play the major roles in reproduction: imagination, memory, intellect, and will. All proceed from the one soul.<sup>18</sup> For the purpose of clearness application will be made to geometry, abstracting from the relations, which in fact are made, to the manifold ideas and phantasms already existing in the subject.

From teacher and from text simple geometrical phantasms are produced in the imagination. Simultaneously the active in-

<sup>12</sup> See St. Thomas, *Summa Theologica*, Ia, q. 76, art. 8, corp. et ad 4; and Cardinal Mercier, *A Manual of Modern Scholastic Philosophy* (St. Louis, 1926), Vol. I, p. 314.

<sup>13</sup> *Summa Theologica.*, Ia, q. 77, art. 1.

<sup>14</sup> *Ibid.*, art. 1, ad 5.

<sup>15</sup> *op. cit.*, p. 173.

<sup>16</sup> *Ibid.*, p. 173: "The faculties kept growing smaller and smaller, until finally there was a distinct faculty for each experience."

<sup>17</sup> *Summa Theologica*, Ia, q. 78, art. 1.

<sup>18</sup> But some operations of the soul are performed by means of corporeal organs. . . . The powers [faculties] which are the principles of these operations have their subject in the composite, and not in the soul alone." *ibid.*, Ia, q. 77, art. 5.

telle abstracts the individuating notes from the phantasms and the passive intellect becomes modified by the corresponding universal geometrical concepts, each of which retains an intention, an ordination to its proper phantasm. "Whilst the fancy *pictures* an individual the intellect *thinks* the universal, and this *thought* is the *general notion* or *concept*."<sup>19</sup> The intellect analyzes and synthesizes to produce new ideas and principles. These remain as modifications of the intellect (intellectual memory<sup>20</sup>), and the corresponding phantasms are retained in the imagination by the power of the soul called *sense* memory. The intellect and imagination are improved passively as the fund of ideas and phantasms increases. According to the generally admitted laws of association, sometimes under the domination of the will and sometimes not, new relations of ideas and of images arise; the intellect is reflecting, it is acquiring new thoughts not directly proposed by teacher or text; the creative or constructive imagination is calling on sense memory and is creating new inferred phantasms. The intellect never functions without turning to the phantasms.<sup>21</sup> This does not prevent our knowledge from transcending the sensible and corporeal. "Incorporeal things, of which there are no phantasms are known to us by comparison with sensible bodies of which there are phantasms."<sup>22</sup> Thus the student of geometry receives a fund of geometrical facts from outside; he accepts guidance in association of, and reflection on, these facts from his teacher; he makes original associations and reflections; and his memory—not as a place, but as a power—retains all this for future use. The student is thinking, willing, imagining, remembering; and when he has acquired a facility in exercising these powers with a reasonably broad field of geometrical facts, he has acquired a knowledge of geometry.

And finally the question; How can this training in geometry be transferred to improve thinking in another field, in English composition, for instance? The student of geometry can now associate and disassociate geometrical ideas, he can construct new ideas based on the old, he can think with facility—in *geometry*. Is this facility a *general* improvement of the faculties, a greater ability, a stronger power, to associate *any* ideas which may enter

<sup>19</sup> M. Maher, *Psychology* (New York, 1925), p. 238.

<sup>20</sup> "It is clear that memory [intellectual] is not a distinct power from the intellect: for it belongs to the nature of a passive power to retain as well as to receive." *Summa Theologica* Ia, q. 79, art. 7, corp.

<sup>21</sup> *ibid.*, Ia, q. 84, art. 7, corp.

<sup>22</sup> *ibid.*, Ia, q. 84, art. 7, ad 3.

the mind; or merely a *specific* improvement whereby the faculties are more facilely exercised *only* when dealing with geometrical ideas? In other words, is training general and formal or only specific and functional? The answer is made with certain distinctions.

Modern experimental psychology accepts transfer of training inasmuch as the ideas being acquired in the field (English composition, in this case) have something in common, something contiguous in origin, something contrary, something in some way productive of association with the ideas and ideals<sup>23</sup> already acquired (in geometry, in this case). If effort is *consciously* made, there are more far-fetched associations and the field of transfer is proportionately broadened. The student who has studied geometry utilizes this thinking ability in the study of English composition as far as there is common content or as far as their interrelations have been consciously taught or observed. Up to this point there is harmony. But only thus far, according to modern educational psychologists, is the theory of *general* training justified. According to them faculty psychology demands much more; it demands formal training, transfer of facility in thinking, remembering, and imagining in the abstract, no matter how diverse and unrelated the subject matter; and, therefore, since this theory of formal training is contrary to modern experimental findings, faculty psychology must be disowned and discarded as absurd.

And how will the friends of faculty psychology answer? If by general ability and facility in the use of any of the faculties, are meant habits of thinking, remembering, etc., developed by logic, method, technique, then faculty psychology supports formal training. But in this sense so also does modern psychology support it. The principles of logic furnish conscious direction for right thinking; method and technique aid memorizing, observing, and imagining. Geometry gives this kind of general training to the student of English composition inasmuch as the principles of logic applied in geometry are transferred by the laws of association and inasmuch, further, as *conscious* transfer of these logical principles is made to the new

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<sup>23</sup> Ideals follow from concepts of order. See *The Philosophy of Teaching of St. Thomas Aquinas* by M. H. Mayer, (Milwaukee, 1929), pp. 155-156. Also G. T. Ladd, *Psychology, Descriptive and Explanatory* (New York, 1894), p. 246: "All ideals are the construction of imagination, suffused with feeling and guided by reasoning faculty."

study. This is not training in the abstract; it is merely applying general known principles to new mental acquisitions. Scholastics do not depart from dependence of all faculties in their activity upon *objects*, either external objects or phantasms of them. If all the ideas, phantasms, logical principles, and improvement in method which geometry has given a student, could be taken from him, he would not retain any abstract training, he would not be a more able student in English composition than if he had never studied geometry.

So, when an analysis of formal discipline and transfer of training is made in the light of scholastic psychology, the conclusion must be that faculty psychology does not demand the theory of formal discipline if by it is meant training in the purely abstract; it is difficult to see how it could even allow it. With this in mind there is little difficulty regarding the extent of transfer of training. This objection, then, of formal training against faculty psychology fades away like the other fundamental objection that faculty psychology postulates compartments in the soul or postulates a number of little souls. Neither old nor new psychology is infallible. Scholastic psychology will stand the test of common-sense, valid experiment. But experiments alone are not safe; psychology cannot safely be completely divorced from metaphysics.<sup>24</sup>

At present, experimental findings seem to show that transfer of training from one field to another is in practise more limited than theory has commonly held. This will and, perhaps, should prestige for higher mathematics as a mind-training study. Literature and history, however, have a value all their own, even though it should be proved that they have little transferable disciplinary value. Progress is ever welcome; but we must not succumb too readily to that strong human weakness, love of grand and sweeping changes, which Norsworthy relevantly suggests, "if we accept fully this new régime, we shall have a vastly different curriculum."<sup>25</sup>

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<sup>24</sup> G. T. Ladd, *op. cit.*, p. x.

<sup>25</sup> N. Norsworthy, *op. cit.*, p. 99.