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Thinking as a Disposition

The development of thinking is generally supported as an important objective of education, but there is little agreement about the kinds of thinking that should be stressed in the classroom or the methods by which the processes of thinking can be improved.

Regardless of an individual's experiences in a classroom, it is obvious that he engages in some sort of mental activity during every waking moment. When his thinking is not focused on a particular subject, there is still a parade of half-formed images, memories, speculations, and anticipations passing across his consciousness. Thus, the teacher who makes thinking an objective of education without specifying the kind, or kinds, of operations he is referring to by the term "thinking" can be assured of reaching his objective, but he should realize that the objective was met long before it was formed, and his efforts had little to do with the achievement.

Certainly no sane teacher would set as his goal the encouragement of aimless mental rambling, an activity that the student can carry on perfectly well without instruction. However, there are other varieties of mental activity besides the aimless stream of consciousness. This is clear when we recall how often it is interrupted. Our thoughts ramble only as long as we are engaged in activities that do not demand our full attention. But it is inevitable in the lives of normal human beings that eventually a situation develops that does demand full attention. That something may be a barrier in the path of habit which compels us to stop and consider what to do next, or it may be something that we see or hear which arouses an irresistable desire for explanation. Whether we are forced or enticed into it, we find ourselves in a problematic situation, and the idle stream of consciousness is at least momentarily interrupted.

While all humans encounter problematic situations, they do not react to them in the same way. To one individual, a problem of any kind is disconcerting. He attempts to order his life so thoroughly that no disturbance can arise to interfere with his established routines. When a problem does arise, he attempts to dispose of it as quickly as possible. If the problem cannot be ignored, he tends to act impulsively or to look for someone to tell him what he should do. If this individual happens to be a child, he will probably grow tired of hearing his parents and teachers

say, "Use your head" or "Think what you are doing." But neither the child nor the adult who issues these orders is likely to have a clear notion of how these orders can be carried out.

But to someone else, problems may be a challenge. While he would no doubt be happy to avoid the petty irritations of life, e.g., stalled autos and misplaced golf shoes, there are other kinds of problems that he actively pursues. Events that others ignore or accept as commonplace, he finds intriguing. He cannot seem to resist the inclination to inquire into their relationships and implications, their meaning. When faced with any sort of a problem, he does not tend to act hastily, nor is he willing to rely blindly upon the advise of others. He tends to withhold action or judgment until he has given careful attention to the alternatives that are available to him and considered the probable consequences of following each. In formulating a plan to resolve the problem, he brings to bear as much relevant data as he can collect from his own past experiences and the experiences of others. When this individual reaches a decision, he does not stop thinking. He is continually evaluating the results of his actions or judgments. He looks for verification. He considers possible revisions to meet unforseen happenings. He is constantly assessing the implications of his experiences for situations that may arise in the future.

It would seem appropriate to describe this individual as a good thinker and to describe his behavior as intelligent. His manner of behaving is probably what parents and teachers hope for when they say to a child, "Think what you are doing", or "Apply your mind." But it is abundantly clear to parents and teachers that it takes more than a command to get a person to think or to behave intelligently. The command is meaningless unless the person has somewhere learned how to carry it out.

Presumably the school would be an appropriate place for individuals to learn to think or to use their intelligence. But to ascertain what it is reasonable to expect schools to do, we must determine what is required for an act to be called intelligent; what are reasonable grounds for concluding that the act has involved thinking.

One obvious requirement for an act to be called intelligent is that it must be an overt act. Suppose that we are walking on the beach and observe an individual in a pose like Rodin's statue staring at the horizon. We may decide to change our itinerary so as not to interrupt what we assume is a deep meditation, but as long as the man sits there in silence, we have no way of assessing his intelligence or the quality of his thinking. As far as we can tell, he may be sleeping or reciting nursery rhymes to himself. To earn the title of good thinker, he must make some intelligent statements, provide intelligent answers to our questions, or perform some overt task in an intelligent manner. Then from his remarks and actions we can find out what sort of matters he is concerned with. We can note the care with which he speaks or acts, the kinds of ideas and judgments he forms, and the quality and relevance of the data he brings to bear on the topic he is discussing or the task he is performing. When we judge

that a person is intelligent or a good thinker, our judgment is based on what the person has said and done, his overt behaviors, whether or not these behaviors were preceded by long periods of meditation.

While intelligence and thinking can only be judged on the basis of overt performances, it takes more than a clever performance to indicate that an act is intelligent or involves thinking. For one thing, a seemingly intelligent act may be the result of blind luck. A novice bridge player may play a card that devastates the carefully planned strategy of his opponents, but he may have selected the card at random with absolutely no comprehension of the damage he was inflicting on his opponents. Such lucky accidents can hardly be called intelligent acts. A seemingly intelligent act can also result from rote training. Humans, like parrots, can be trained to say clever things and like seals and dogs can be trained to perform clever tricks. If we ask a five year old, what is seven times seven, and he replies that it is forty nine, we cannot immediately infer that he has great intelligence or has done some significant thinking. His response may have been a lucky accident, or he may have been parroting the responses of older brothers and sisters. An intelligent act, an act that involves thinking, is done on purpose. The actor is aware of what it is that he is doing. Although the consequences of the act may not be precisely those that he intends, the important thing is that he has intentions, and his intentions are based on available data rather than blind hope.

To say that a good thinker, or intelligent actor has intentions and knows what he is doing may seem to suggest that an intelligent act is in reality two acts; that the overt act must necessarily be preceded by some sort of "internal" or "mental" act through which the actor decides what needs to be done. Gilbert Ryle shows how this account of intelligent activity leads to difficulty:

> "To put it quite generally, the absurd assumption made by the intellectualist legend is this, that a performance of any sort inherits all its title to intelligence from some anterior internal operation of planning what to do. Now very often we do go through such a process of planning what to do, and, if we are silly, our planning is silly, if shrewd, our planning is shrewd. It is also notoriously possible for us to plan shrewdly and perform stupidly, i.e., to flout our precepts in practice. By the original argument, therefore, our intellectual planning process must inherit its title to shrewdness from yet another anterior process of planning to plan, and this process could in its turn be silly or shrewd. The regress is infinite, and this reduces to absurdity the theory that for an operation to be intelligent it must be steered by a prior intellectual operation."[1]

Overt behaviors, actions and remarks, are the only means available for judging an individual's intelligence, yet no act or remark is of itself a sure indication of intelligence. Before we can be certain that a particular performance was, in fact, intelligent, we need some assurance that it was not just a lucky accident, a blind imitation of someone else's performance, or a rote response to a cue. To obtain this assurance we are forced to look beyond this particular performance. However, this does not mean that we are forced to conjecture about the secret operations conducted in the performer's mind. An alternative is to turn our investigation to other

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[1]Gilbert Ryle, *The Concept of Mind* (New York: Barnes & Noble, 1949), p. 31.

overt acts of the performer, his behavior both before and after the performance in question. If we find that he has faced the same or similar circumstances numerous times in the past and has often performed with equal brilliance, we have evidence that this performance was not just a fluke. If we observe him adjusting his subsequent performances to reflect unforeseen changes in the circumstances, we have evidence that this performance was not merely rote.

Of course, to determine whether the performer knew what he was doing, we may also want to ask him why he did what he did. Perhaps our question would be phrased, "What did you have in mind?" But when we put this question to him, we are not asking him to give us a review of some mysterious, psychic procedures that preceded his overt activity, we are asking him to state the grounds upon which his actions were based and the results he anticipated his actions would bring. His response to these kinds of questions might well be useful in determining how intelligent his performance was. It does not make his performance any less intelligent if we discover that he was not consciously engaged in planning his performance just prior to it.

If intelligent overt performances cannot be explained by reference to prior mental performances, we might try accounting for them on the basis of prior overt performances. One might hold that an intelligent performance is simply a skillful performance, and what enables an individual to perform skillfully or intelligently in a given situation is the fact that he has learned through deliberate training, or perhaps trial and error, to deal with that situation in an efficient manner. Thus, an intelligent airplane pilot is one who has learned how to take off, land, and execute various maneuvers skillfully. He has learned how to read various navigation instruments and to make appropriate responses. He has learned to detect changes in weather conditions and to adjust course and altitude accordingly. He has learned certain procedures to be followed in the event of emergencies of various kinds.

Now in many circumstances it seems equally appropriate to describe a performance as either skillful or intelligent. For example, if our pilot experiences power failure on take off and is able to bring his plane down safely in a pasture, his passengers will likely praise both his intelligence and his skill, and it would probably be impossible for them, or anyone else, to decide which of his actions should be credited to intelligence and which should be credited to skill. What we describe as an intelligent performance is often the application of a skill, and when we describe a performance as skillful, we often mean, not only that the performer exercized skill, but also that he exercized the skill intelligently.

However, a skill is not always exercized intelligently. Suppose that our pilot in the example above has been trained to make landings into the wind. When he experiences power failure, he has no recourse but to land immediately. But circumstances may be such that a landing into the wind will entail crashing into a mountain or a school. Thus, if he makes

a landing the way he was instructed and the way he has practiced, he jeopardizes his own life and perhaps the lives of others. His survival may depend upon his ability to overrule the tendency to perform as trained and to improvise alternative procedures that are appropriate to the situation. Even if he has received no instructions in cross wind landing and has never tried one, we expect an intelligent pilot to attempt one rather than follow a procedure that is pointing toward certain destruction.

Let us consider another possibility. Suppose that the training of this pilot had included ample instruction and practice for dealing with the emergency he experienced. It is still possible for his performance to be unintelligent. Through inattentiveness or panic he may fail to make use of the techniques he has been given to deal with the situation, and this failure would certainly be sufficient ground for concluding that he was not behaving intelligently.

Thus, training and practice do not make a performance intelligent. In a given situation, the individual who has received the training and practice may fail to use the techniques he has learned, or he may attempt to apply techniques that some existing condition makes inappropriate.

Perhaps we can clarify what is meant by an intelligent performance by considering what requirement is lacking in a merely skillful performance. When we observe a skillful performer failing to make use of appropriate techniques we know he has mastered, or using techniques that some factor in the situation makes inappropriate, we are likely to say, "He is not thinking what he is doing." Now when 'thinking' is used in this way, it is used in reference to a disposition or manner of acting rather than a set of actions. It refers to the quality of behavior suggested by such terms as 'alert' and 'aware,' and being alert or aware is neither a "mental" nor an overt act. It is acting in a particular way. The performer who is thinking, in this sense of the word, is not engaged in some activity in addition to the one we are watching. Whether he happens to be engaged in flying a plane, playing poker, or buying a lawn mower, he is using elements in the existing situation as signs of possible consequences, and his responses to the situation are directed toward actualizing certain of the possibilities or preventing others from occurring. He is aware of where his present course of action is taking him, and he is ready to modify or abandon it as the situation suggests.

Gilbert Ryle offers a good illustration of the disposition to think in his description of an intelligent mountain climber:

> "A mountaineer walking over ice-covered rocks in a high wind in the dark does not move his limbs by blind habit; he thinks what he is doing, he is ready for emergencies, he economizes his efforts, he makes tests and experiments; in short he walks with some degree of skill and judgment. If he makes a mistake, he is not inclined to repeat it, and if he finds a new trick effective, he is inclined to continue to use it and to improve on it. He is concomitantly walking and teaching himself how to walk in conditions of this sort. It is the essence of merely habitual practices that one performance is a replica of its predecessors. It is of the essence of intelligent practices that one performance is modified by its predecessors. The agent is still learning."[2]

[2] *Ibid.*, p. 42.

When Ryle says that the mountaineer is both walking and teaching himself to walk, he is not suggesting that two operations are going on. If we were watching the climber at his task, we could not record in a logbook those periods during which he was walking and those periods during which he was teaching himself to walk. What is more, he could not do it either. He is ready for emergencies, but this does not mean that he must constantly warn himself to watch out for this or that possibility. He is testing and experimenting, but this does not mean that he must issue orders to himself to run this or that test and report back to himself the results he has found. The only activity he is engaged in is climbing the mountain, but he is climbing in a special manner; he is climbing carefully, alertly, intelligently.

Both Dewey and Ryle have noted the confusion that arises from such expressions as "Think what you are doing." The word, think, is grammatically a verb, and verbs usually denote the occurrence of action. We are therefore likely to infer that a person who is thinking what he is doing is really engaged in two activities simultaneously. Dewey suggests that we can eliminate this confusion by conceiving of thinking as an adjective or an adverb:

> "Thought, reason, intelligence, whatever word we choose to use, is existentially an adjective (or better still an adverb) not a noun. It is a disposition of activity, a quality of that conduct which foresees consequences of existing events, and which uses what is foreseen as a plan and method of administering affairs."[3]

Ryle shares this view and points out that verbs referring to thinking (or "heed verbs" as he calls them) can readily be replaced by adverbs.[4] Thus, instead of telling a person to think what he is reading or to think while he is driving, we can just as appropriately and more meaningfully tell him to read attentively or to drive carefully.

EDUCATIONAL IMPLICATIONS OF THE CONCEPTION OF THINKING AS A DISPOSITION

The conception of thinking as a disposition of behavior rather than a discrete set of behaviors has important implications for the task of establishing a school program to develop thinking. It suggests that students cannot acquire the disposition to think by merely mastering particular bodies of knowledge, for thinking is conceived as a manner of conduct, and there is no necessary connection between the amount and variety of knowledge that one has acquired and the way in which he conducts himself. In the same situation, a highly knowledgable person, disposed to be impulsive, apathetic, or compliant, may fail to make use of his knowledge, while a relatively uninformed person, disposed to be thoughtful, may set about getting the information he needs.

This conception of thinking also suggests that thinking cannot be translated into a set of operations to be mastered by students in particular

[3]John Dewey, *Experience and Nature* (New York: Dover Publications Inc. 1958) p. 158.

[4]Ryle, *op. cit,* p. 138.

school courses or units, for there is no set of operations that is the equivalent of 'heeding' or 'being aware', and whatever set of operations is established as the content of the thinking course or unit, could be performed mechanically, that is, unthinkingly. The task of developing thinking in school is not, therefore, "to teach students how to think" as analogous to teaching them how to read, or how to drive autos. It is rather to foster in students the disposition to read thoughtfully, to drive thoughtfully, and to engage in a host of other activities in a thoughtful manner.

While the task of fostering the disposition to be thoughtful can be distinguished from the task of teaching knowledge and skills, this is not to suggest that these tasks should be carried on separately in the schools. The teacher who decided to devote a course or unit exclusively to fostering the disposition to be thoughtful would find that his course had no content. He could do little more than exhort his students to keep alert to possibilities, to watch out for pitfalls, to think what they are doing. On the other hand, the teacher who decided to devote a course or unit exclusively to the mastery of a skill or a body of knowledge would be a teacher who had no concern for the manner in which the student put the knowledge or skill to use. Whether or not the student was inclined to extend his knowledge and skills or to seek possible applications of the knowledge and skills to his own concerns would be of no consequence.

The foregoing suggests that a program to foster thinking should be conducted in connection with other school programs rather than made an independent enterprise. Perhaps a way of combining the task of fostering the disposition to think with the task of teaching knowledge and skills can best be illustrated by an example.

Suppose that we are involved in the task of developing a driver education program. Conceivably, we would establish as the aim of our program the development of good drivers, and we would want our program to provide our students with whatever is required to be a good driver. From our consideration of the requirements for good driving, we could undoubtedly establish some knowledge and some skills that we would want our students to master. In regard to knowledge, for example, we would probably want the students to learn the function and maintenance requirements of various pieces of automotive equipment. We would also want them to learn some of the state and local laws and regulations pertaining to the operation of motor vehicles as well as some of the generally recognized principles of good driving, e.g., slow down when visibility is restricted. In regard to skills, we would certainly insist that our students master the sequences of operations necessary for starting and stopping the car, making turns, parking, etc.

Our selection of knowledge and skills to be mastered would be based upon our prediction of the various situations that our students will encounter in driving. We want our students to know the speed limit in school zones and to know how to back into a parking place because we can assume that virtually all of them will eventually encounter situations

that call for this knowledge. However, this procedure is useful only for identifying knowledge and skills that are generally required for good driving. If we attempted to identify and teach all of the knowledge and skills that our students will need to respond effectively to the situations they will encounter in driving, we would be undertaking an impossible task, for the combination of elements that must be reckoned with in driving is constantly changing. The driver encounters variations in topography, weather, and road conditions. He encounters variations in the relative positions of pedestrians and other cars. He encounters variations in the car he is driving. What is more, he encounters variations in his own condition. On different occasions he may be hot, tired, irritated, despondent, or preoccupied. Any of these factors may be relevant for determining what constitutes good driving in a given situation.

These considerations suggests that our driving course cannot provide the student with a catalogue of pertinent information and appropriate procedures with enough entries to cover the wide variety of circumstances he is likely to encounter in his driving. Regardless of how many items of knowledge and how many procedures he is able to master in the course, we can be reasonably certain that he will eventually encounter situations which present combinations of elements for which no specific responses have been specified. Whether or not our student handles these situations effectively may well depend on whether or not he is disposed to think. If he is an impulsive driver, his hasty response may bring about dire consequences that could have been foreseen and avoided. If he is a mechanical driver, he may follow some procedure we have taught him, oblivious to an element in the existing situation that makes that procedure inappropriate.

Thus, we conclude that our driver education course should include some provisions for the encouragement of thinking. We want to turn out drivers who are knowledgeable and skillful, but not drivers who rely entirely on what they have been taught in the driving course. We want drivers who are constantly alert for signs of possibility in existing situations that may suggest modification of or departure from normal procedures. We want drivers who continually use their own driving experiences, as well as those of others, to add to and revise their knowledge of driving and their repertoire of driving techniques.

Our decision to include provisions for the encouragement of thinking in the driving course does not mean that periodically we will spend a class period teaching thinking instead of teaching driving knowledge and skills. It does mean that we will give special attention to the manner in which knowledge and skills are imparted to the student. We will not let the mastery of various bodies of information and various sets of procedures become isolated enterprises. Rather, we will help the student to perceive the information and procedures as instrumental in dealing with specific driving situations that he is experiencing or is likely to experience. When we introduce a new set of procedures to the student,

we will make certain that he does not take these procedures as a recipe to be followed blindly. We will help him to recognize the specific driving problems that these procedures are designed to meet and the contribution of each action to the final results. We will also discuss with the student the reasonable limits of applicability for the procedures and possible alternatives. We will do everything possible to discourage docility. We will make it clear to the student that anything stated in lectures or textbooks is subject to challenge. When challenges occur, we will carefully consider the logical and empirical basis of the alternatives. We will ask the student many questions during the course, but the primary purpose of our questions will not be to discover whether the student knows what we have ordained as the correct answers, but rather to exemplify the sorts of questions he must ask himself while driving. We will continually pose hypothetical driving situations and ask the student to indicate what line of action he would take in that situation and why. Then we will help him to evaluate his choices by pointing out factors in the situation that he may have overlooked or misinterpreted.

While these methods are merely suggestive, they are meant to illustrate how the disposition to think might be encouraged in a particular school program. A driver training course was selected for illustration because such courses are not generally thought of as "intellectual," i.e., conducive to thinking. The same or similar procedures might be appropriately used to encourage thinking in many other school programs.

It is difficult to determine the extent to which school programs can influence an individual's disposition to think. It is rarely possible to trace the acquisition or development of a disposition to particular times and places. If we attempt to establish precisely how and where an individual acquired his disposition to be kind or honest, we have great difficulty connecting the acquisition with specific situations, activities, or associations. It seems that generally a disposition develops from a variety of experiences that are shared with a variety of individuals. As a child matures, he continually acts in relation to individuals and objects in his surroundings. They in turn react to him. Some of his actions are supported, and others are resisted. Sometimes he is encouraged. Other times he is discouraged or ignored. From a multitude of such exchanges, dispositions or general manners of responding seem to emerge.

If the disposition to think evolves in the manner we have described, it would seem foolhardy to assign the task of fostering thinking to one teacher. Even if that teacher were able to establish conditions in his classroom that are ideal for the formation of the disposition to think, conditions that his students encounter in other classrooms may systematically discourage the disposition. While it is sometimes possible to trace a dramatic change in an individual's manner of thinking to one particular teacher or classroom, such cases are unusual. A school is not likely to make a significant contribution to the development of the disposition to think until conditions conducive to thinking prevail generally in the school.