

rote learning in nepalese public schools

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Research of rote learning and related topics has been extensive, but is unusually limited specific to the Nepalese application of the technique. Therefore, this article will (1) attempt to cite studies yielding information transferable to the Nepalese situation, and (2) restrict the scope of concern to studies of educational psychology, pragmatic philosophy, and analytic philosophy.

When a citizen of a western-hemispheric nation visits Nepal, few national characteristics are more striking in an institutional sense than the Nepalese public schools. The visitor may be astonished at the large number of students who are not in attendance at a school, but instead work in the fields or shops owned by their families. Perhaps the visitor will notice the significant shortage of printed materials and the near absence of even the most unsophisticated audio-visual equipment. Of all possible characteristics, however, the western observer may decide that it is the methodology by which Nepalese children are taught that is most unlike systems to which he has been exposed.

Rote learning is the most-used methodology in many Nepalese schools. It can generally be characterized as exhibiting (1) rote memorization of material selected for learning, (2) unison class recitation of the selected material, and (3) extensive utilization of review techniques strictly rote in nature. Various other components of rote learning can be identified, but the ones presented here most completely reflect the Nepalese utilization of the methodology.

Normally, a teacher presides over a class of Nepalese students and leads them in repetitive drill of selected material. The teacher will recite the material aloud and the class will echo his statements in unison. Often, such unison class-participation becomes quite noisy, even to the point of appearing unruly. Nonetheless, this procedure is repeated often enough to insure that most students commit the teacher's statements to memory. Subsequent to this stage in the learning process, the teacher's presence is no longer essential. This being the case, the teacher occasionally assigns a student (often from a more advanced grade-level) the responsibility of leading the recitation-exercises. In this manner the rote technique is utilized in courses of foreign language, mathematics, and the social sciences. It is more often employed on the primary level than in subsequent schooling, though this is not to suggest that its use is consciously deemphasized on secondary or higher education levels.

The preceding description attempts to explain rote learning as it is applied in Nepalese schools. The technique, however, is not unknown in other cultures and has attracted considerable attention from educational psychologists, educational philosophers, and other learning theorists.

For many psychologists, rote learning is a process whereby specific items are mentally recorded but may or may not be associated with other previously learned cognitive structures. David Ausubel describes items learned by rote as "discrete and relatively isolated entities that are related to cognitive structure only in an arbitrary and verbatim fashion, not permitting the establishment of 'meaningful' relationships"¹ Generally, such material is considered meaningless beyond some immediate utilitarian function. For example, Brown suggests that most persons can memorize numerous telephone numbers and zip codes, but will not associate these things with cognitive hierarchical organization.² Having thus been memorized, such material is highly vulnerable to the diminishing effects of cognitively related material (hereafter referred to as "interference"), and may be quickly lost in the absence of intermittent reinforcement.³ Consequently, rote learning as a process is responsible for no more than a small percentage of human learning.⁴

School authorities in Nepal assert that their efforts are directed toward the thorough teaching of selected material to all students. If, by teaching, the authorities mean presenting material for student "comprehension", then Richard C. Anderson might question their methodology. Anderson identifies the critical processes of comprehension as orthographic (perceptual features), phonological (acoustical features) and semantic (cognitive features)⁵. He identifies each process as an encoding stage and defines the characteristics of each.

According to Anderson's analysis, a learner will initially utilize the orthographic and phonological encodings (depending upon the mode of material presentation) for all learning. However, the semantic or highest level of cognitive encoding is not a necessary result of the previous two. It is possible, for example, to repeat verbatim a memorized set of materials without awareness of its meaning. In addition, this kind of comprehension can be retained for long periods.⁶ Such evidence seems to pose serious questions about the truly cognitive value of rote learning.

Perhaps the real aim of Nepalese education is not comprehension of subject matter, but performance of certain curriculum-related-criterion tasks (i.e., successful completion of the School Leaving Certificate Examination). In this case, an analysis of data gathered for Sax, Eilenberg, and Klockars indicate support for learning blocks of material which can later be recoded and applied to answering complex questions.⁷ The study indicates that the greater the original block of information the higher the

students' achievement across all tests. These results support the hierarchical model of learning, which elsewhere defines "achievement" as a function of learning those skills prerequisite to performing specific criterion-tasks.⁸ However, none of the more contemporary research validates earlier admonitions that all references to concept-acquisition should be replaced by pure-rote learning.⁹ Disputes with the validity of the hierarchical model have appeared on several fronts.

Thorndike argued in favour of a "transfer model" of learning which proposes that similarity between the material being learned and the criterion-task will facilitate the necessary transfer process.¹⁰ It may be possible to extrapolate from the transfer model the idea that test items based upon rote recall do have some degree of value even when the criterion task is more complex. This is substantiated by recent research, which encourages the use of complex test-items to increase student motivation for learning complex skills.¹¹ If performance of criterion-tasks is the aim of rote learning, how effective is the rote method in promoting maintenance of the information necessary to perform such tasks over extended periods of time? In other words, how effective is rote learning in promoting retention?

Retention is defined as preservation of the after-effects of learning, "so that recall or recognition is possible".¹² When recall or recognition is not possible, forgetting is said to have occurred. Obviously, retention and forgetting are inversely related. When learning is retained (even for fewer than 30 seconds), retention is functioning. On the other hand, when the same material can no longer be remembered, forgetting has taken place.

Historically, forgetting was blamed upon cognitive decay over time. According to that theory, the demise of retention could be accelerated by disuse. However, more contemporary research indicates that forgetting is selective,¹³ and that some material is more easily forgotten than is similar material simultaneously learned. Within several of the more recent theories of forgetting exists the consensus that interference serves as the primary cause for loss of retention. Such interference can develop from either retroactive (subsequent learning) or proactive (previous learning) sources. Of the research done in this area, the latest studies substantiate the thesis that proactive interference is most often responsible for retention loss.¹⁴ This finding has great significance when viewed in the context of secondary and higher-level learners whose past experiences provide great potential for proactive interference. When considered in conjunction with its limited associational capability, the rote method appears to be highly inefficient at these levels. It might be concluded that such evidence supports use of rote learning in primary grades, where proactive interference would likely be minimal. Such a position would appear to ignore the question of rote learning's

cognitive value, and could be advanced for almost any teaching methodology at the elementary-school level.

If Ausubel, Brown, Anderson, and others are correct in their assessments of rote learning, the inquiry must then turn to an alternative technique that is considered more desirable. Many educational psychologists suggest that such an alternative is concept-acquisition learning. It is best defined as an efficient process of conceptualization, relating newly learned "material to relevant established entities in cognitive structure."¹⁵ More simply, this means that newly learned material is understood in a manner that allows for meaningful association with previously acquired information. Such learning characterizes most human acquisition and generally is very efficient in resisting interference. Brown refers to one process associated with meaningful learning as "cognitive pruning."¹⁶ He identifies it as a mental process arising from a need for cognitive economy. Its primary function is elimination of unnecessary confusion within the cognitive field. By pruning out less needed material, organization of more important structures is facilitated. He further explains that, in the earliest stages of learning, the cognitive field is cluttered with fragments of information. However, as the process of "cognitive pruning" proceeds, certain less essential elements are eliminated and the remaining scattered structures tend to pull together. The final product is "perceived as a single whole without clearly defined parts."¹⁷ Perhaps the most promising aspect of this theory is Brown's assertion that "cognitive pruning" is a systematic process, capable of being controlled. If he is correct, and if this function can later be isolated, then teacher promotion of outstanding pruning procedures should facilitate learning. In addition, Brown predicts that use of the pruning procedure has potential for producing "retention far beyond that normally expected under the more traditional theories of forgetting."¹⁸

The preceding discussion of the psychological aspects of Nepalese rote learning may seem somewhat unsatisfying and inconclusive. Perhaps this can be partially explained by considering the more fundamental questions involved. For example, how is it possible to evaluate the various merits of rote learning or concept-acquisition until a fundamental term such as "teaching" has been assigned a clear meaning? Likewise, how can the capability of any method to supply students with comprehension be questioned, before a functional definition of "comprehension" has been adopted? It is to these and other related questions that this paper now turns.

When educational psychologists and other learning theorists refer to a given activity as "teaching", what do they actually mean? Thomas F. Green has attempted via an analytic technique to define this term and others by reducing them to their lowest terms. His interpretations are consistent with those of most other contemporary educational philosophers, and are of special value to this discussion in their demonstration of the interrelatedness of educational terminology. Green begins by suggesting that "teaching cannot be understood as the kind of activity that causes learning, because it can occur when learning does not. Moreover, learning can occur when there is no teaching."¹⁹ This would seem to imply that learning can be an occurrence of teaching, but that learning is not a necessary result of teaching. Perhaps it also suggests that factors other than those of teaching serve as partial determinants of learning. If this is so, it may provide some explanation of why even a superior teacher cannot "teach" the simplest concept to a tree.

Our concern, however, is with teaching human beings and not trees. Therefore, in terms of human learning what is intended by use of the word "teaching"? Green suggests that there are at least two contexts of the term "teaching," one of which is "... concerned primarily with shaping behaviour, and molding habits."²⁰ He delineates this context from the one in which the "... primary interest is to shape beliefs or to communicate knowledge."²¹ Green seems to believe that the distinction between these concepts is a linguistic one. That is, the concepts have different meanings when in the English language one makes reference to "teaching someone to do so-and-so," or "teaching someone that so-and-so is the case."²² This contextual delineation deserves further explanation.

Within Green's first identified context, he proposes the phenomenon of behaviour formation. Contained within this context are those kinds of teaching-activity that produce behavioural conformity. For example, teaching a child to close a door after he has entered or exited a room. Such behaviour is likely not instinctive in the sense that the child would have consistently performed such an act in the absence of some variety of instruction. Therefore, in order that the desired behaviour occur, the subject-child must in some way be taught to perform it. Other examples of this teaching phenomenon may be recognized in teaching students not to make disturbances while the teacher is offering instruction, and in teaching French language students to say without hesitation "bon jour" when they meet a Frenchman during the day and "bon soir" when they meet him at night.

Green's second context focuses upon the transmission of knowledge. Within this level, the purpose of teaching seems to be transmission of selected information from teacher to student.

Such teaching occurs when a child is taught that Christopher Columbus discovered America, that $E = mc^2$ is an Einsteinian theory, or that the Van Allen radiation belt surrounds the earth and extends outward from a point 500 miles above the planet to a distance of nearly 1,000 miles.

Utilizing the two contexts outlined above, Green further defines "teaching" by discussing other terms which he suggests are components of its broader concept. He begins this discussion by examining the word "training."

Green writes that "the distinction between teaching and training turns upon the degree to which the behaviour aimed at in teaching or training is a manifestation of intelligence."²³ He explains that in a broad contextual sense the focus of teaching appears to be upon a display of intelligence. The primary concern of training, on the other hand, is the shaping of behaviour. Such a concern can be contrasted to the concept "teaching" that exhibits a more expansive focus, including not only the shaping of behaviour but also the transmission of information. Green believes that, as the emphasis of training shifts increasingly away from a display of knowledge (and apparently, increasingly toward behaviour shaping), application of the training-concept weakens. When the emphasis has attained a certain (albeit nebulous) magnitude, the term "training" is appropriately displaced by the term "conditioning." Obviously, training and conditioning are related conceptually, but Green theorizes that the result of conditioning "is not expressive of intelligence."²⁴ He appears to view conditioning in much the same manner a S-R psychologist might. Accordingly, Green would likely perceive "conditioning" as what Pavlov was demonstrating with his dogs. Surely Pavlov's intention was not to create a discernible display of intelligence from the dogs, but was rather aimed at elicitation of specific behaviour.

An implication of Green's definition of conditioning might suggest that it is not a method of instruction. Green points out, however, that conditioning can be a significant component of a methodology that is in part designed to shape behaviour expressive of intelligence.

When a reader mentally formulates a concept in compliance with Green's definition of "teaching" and subtracts from it those features that Green identifies as "training", the remainder should be similar to what Green nominates as "instructing." He writes that "what we seek to express by the phrase 'giving instruction' is precisely what we seek to omit by use of the word training."²⁵ It would appear that "instruction" as a concept holds meaning for Green that involves "communication" between teacher and student. This communication, moreover, appears directed toward acquisition of knowledge rather than toward behaviour shaping. Green refers to this teacher-student communication as "conversation,"²⁶ and

points to its significance as a conveyer of an appreciation for academic honesty. For example, when a teacher emphasizes the need for reasons, explanations, valid measurement, logical argument, proper evidence, etc., implicit within such emphasis is an appreciation for teaching and for forming conclusions upon evidence that is honest (believable). It is only when the concern for such academic honesty is dwarfed by a desire merely to transmit beliefs that the concept of instructing begins to break down. The result of this potential deterioration is what Green designates as "indoctrination."

The concept of "indoctrination" differs from instructing primarily "in the weight given to the pursuit of truth as opposed to the simple transmission of beliefs. ..." For Green, the aim of indoctrination is the selling of an idea. The teacher's goal is student acceptance of the material presented. In this sense, the teacher seeks commitment to an idea by the student. If the student accepts the idea, then the indoctrination is successful. In other words, the concern of the teacher is to have particular ideas adopted by the student. The question of an idea's validity is unimportant since the only aim of indoctrination is acceptance. In terms of practical school application, indoctrination "aims at inculcating the 'right answer,' but not necessarily for the 'right reasons' or ever for good reasons."²⁸ This may suggest that in terms of its ability to impart inaccurate information, indoctrination is a potentially dangerous technique. As an illustration of this potential danger, an earlier reference was made in this article to the Van Allen radiation belt (page 60). In that brief passage information was supplied and likely accepted by all but the most informed and critical reader. That information, however, was imprecise. The earlier discussion of the Van Allen Belt reported its width as extending from 500 to 1,000 miles into space. Unfortunately for the reader who may have attempted to utilize those figures, the true dimensions appear to range from 500 to 30,000 miles into space. This transmission of misinformation was intentional and is here exposed to emphasize the potential of unscrupulous use of indoctrinative techniques for academic, political, social, religious, or other purposes. Nor should accidental transmission of misinformation be minimized. If the validity of material presented for learning is not periodically (or perhaps continuously) questioned and measured, such accidents can occur. This is of special significance in view of Ernest E. Bayles' contention that "insight" may be vague, unanalyzed, and even incorrect.²⁹ He indicates that the nature of an insight's truthfulness does not alter its existence as "insight", nor does it limit the insight's function in modification of behaviour. This may intensify the admonition that teachers refrain from utilizing indoctrinative techniques and conscientiously avoid accidental transmission of inaccurate information.

The previous discussions have approached the question of rote learning in terms of teacher actions. However, Walter Feinberg points out that limiting the question of indoctrination (and other teaching methodologies) to teacher activities, ignores false beliefs and irrational values frequently held by students.³⁰ He appears concerned that such limited consideration of methodology may allow the teacher to avoid responsibility for student-held beliefs and values when they are not the direct result of classroom student teacher interactions. Apparently, Feinberg believes that there are certain culturally predictable, student-held, false beliefs and irrational values. Therefore, it would seem that teachers can reinforce such beliefs and values by omission of explanation, as well as by commission of indoctrination.

Bayles proposes that teachers must lead the way in helping students develop "better attitudes toward life than those they bring to school."³¹ He suggests that the teacher advance certain provisional definitions of "good" or "better." These definitions are then tested for their appropriateness in application to cases for which their use is stipulated. On the basis of these criterion definitions, students can determine not only what results or positions are suggested by their logical application, but also whether the definitions have proven useful as guides. If they are proven satisfactory in one or more cases, then they may be considered for application to others as well. Bayles writes, "... to work out the conclusions and commitments that a criterion logically requires is a vital consideration in determining whether it is to be adopted for further employment. If it serves satisfactorily for one occasion or purpose, it may give promise of doing so for others. In this way the breadth of its useability can be gauged."³²

This discussion began by asking what educational psychologists and other learning theorists mean when they refer to a specific act as "teaching." Hopefully, the preceding dissection of the concept will offer support to the contention that few educationalists have a clear understanding of "teaching." More likely, they view teaching as instructing, training, indoctrinating, conditioning, or a combination of several or all of these. Such conceptual divergence tends to confuse questions of educational significance, and renders their solutions virtually impossible.

Originally, this article proposed to analyze rote learning, as the technique is utilized in Nepal. The Nepalese technique, as suggested earlier, is characterized as exhibiting (1) memorization of materials presented for learning, (2) unison class recitation of the material learned by rote, and (3) extensive use of review techniques strictly rote in nature. It is the position of the author that the latter two characteristics function primarily to reinforce rote memorization of selected materials. Therefore, this analysis will be limited to discussion of the former characteristic. Perhaps the first step would be to ask what rote learning means.

By definition, "rote learning" is a fixed or mechanical method of teaching and learning. Beyond this definition, modern dictionary sources suggest that doing something by rote connotes the use of memorization with limited cognitive effort.³³ Fundamentally, the use of the rote-learning technique also assumes possession of information deemed important and worthy of transmission. However, this is not to imply that possession of information can be equated with a desire to transmit it. Some might argue that not all possessed information is worthy of transmission; in fact, such determination by teachers is often purely subjective unless dictated by some higher authority. If a block or piece of information is judged not suitable for transmission, then as student becomes teacher the information may no longer be possessed. In the course of time, such information may cease to be an extant commodity. Furthermore, this assumption of worth has special significance in a purely rote system. If rote learners become so fixed within the rote method that only material presented by rote is deemed worthy of being learned, then it would seem that the selector of "worthy information" wields tremendous potential academic influence. Further, as the selected information may involve political, social, philosophic, cultural, religious, or other matters, its influence could assume proportions beyond academe.

A second major assumption within the rote learning concept is that by memorizing material one will "learn" that material. Critics of the rote method have often argued that ability to recite from memory cannot be equated with having learned what is recited. This debate is crucial to any discussion of rote learning, and deserves further refinement. Such refinement might commence with a question of the true nature of memorization and of what it means to learn something.

Memory is "non-inferential knowledge of past perceptual objects ... or of past emotions, feelings and states of consciousness of the remembering subject ..." ³⁴ Psychologically, the concept is divisible into three functions which are "(a) revival or reproduction of the memory image, (b) recognition of the image as belonging to the past of the remembering subject, and (c) temporal localization of the remembered object by reference to a psychological or physical time-scheme." ³⁵ In other words, memory is a kind of knowledge. This particular kind of knowledge, however, is non-inferential and limited to previous perceptions, emotions, feelings, etc. As Ausubel is quoted as pointing out earlier in this article rote learned items tend to be discrete and isolated from other cognitive structures. ³⁶ And, in terms of "comprehension" Anderson argues that rote learned material can be reproduced verbatim, but that such skill is not synonymous with comprehension. ³⁷ Therefore, if it is possible to draw a tentative parallel between comprehension (understanding) on one hand and memorization on the other, perhaps we can approach a meaningful distinction between the two sides of this question.

Comprehension seems to differ from memorization primarily in its capability of serving as inferential knowledge. If the object of teaching is the yielding of inferential knowledge, then present information would suggest that rote learning is an inefficient methodology. Alternatively, if the object of teaching is ready recall of material with little or no emphasis upon its relationship to other cognitive structures or its efficiency as in inferential tool, then rote learning is an acceptable technique.

The advocates of rote learning appear to find value in the very act of repeating material, as though such repetition will produce some desired result other than memorization. This assumption of the value of repetitive drill is not unlike various forms of S-R conditioning, as advanced by Skinnerian psychologists. They contend that repetitive drill tends to stamp in bonds which in turn shape behaviour. However, Bayles has written that "successive repetitions, instead of serving merely to stamp in bonds, serve rather as successive opportunities for gaining insight."³⁸ According to Bayles, psychologists now realize that a complex skill (one that involves numerous insights) may be learned a piece at a time. "That is to say, the learner catches one point here, adopts it, and makes an improvement; catches another point there, adopts it, and makes another improvement. ..." ³⁹ In essence, Bayles has suggested that acquiring knowledges, skills, and attitudes are all the result of developing insights. In so far as repetition may increase the number of opportunities for creation or modification of insight, it has value. This argument, however, does not support reliance upon repetitive drill. Bayles argues that the purpose of acquiring knowledge is to secure retrieval of information pertinent to a given situation at a given time. Such retrieval is possible by means of "logical deduction." That is to say, mental operations appear to follow very definite patterns. If a learner understands these patterns, he can go directly to desired information regardless of his prior knowledge of its location or even of its existence. It is that process of "logical deduction" that serves as the locational guide to information, not memorization. Bayles writes that "thought patterns represent the filing systems of the mind. To be able to 'follow the run' of a thought pattern is to understand it. Broad principles or generalizations-high-level abstractions-constitute thought patterns that have high retrieval value; they represent the kind of knowledge that makes transfer readily possible and enables a possessor to find it useful."⁴⁰ Bayles' position is overt denial of the efficacy of repetitive drill. If only experiences that produce new or modified insights are of value in promoting learning, there must be more positive means than rote of promoting such.

To decide whether learning has occurred when material has been memorized, one must be specific in his definition of learning. If learning means "memorization," then it would be absurd to argue that use of the rote method is inappropriate. It is precisely as "memorization" that English-speaking persons often use the term "learning". For example, a person might ask a newly arrived immigrant to the United States whether he has learned the Pledge of Allegiance. In posing this question, the inquirer probably is asking, "Have you succeeded in memorizing the Pledge of Allegiance?" It is highly unlikely that the person asking the original question sought information about the immigrant's understanding of the Pledge, knowledge of its historical significance, or any matter other than its memorization. In this manner, "learning" can be used and interpreted to mean memorization, and as such to exhibit the qualities of memory described above. It seems apparent, then, that critics of the method must have a very different interpretation in mind when they argue that rote technique does not produce "learning".

Learning can also mean acquiring knowledge of or skill in some subject or function. According to such a view, something becomes known, has meaning for an individual, and assumes a place among his cognitive structures. Within such a definition of learning, cognitive relationships between present and previous knowledge are possible, as is the apprehension of truth (or what is believed to be truth). This particular sense of learning implies relationships among the object, the subject, and previous (and, potentially, futuristic) knowledge which is inferential. Such an idea of learning is not far removed from what Bayles refers to as the "goal-insight" theory.⁴¹ Bayles proposes that the process of learning could be defined as "development of a sense of direction or bearing which can be used, when occasion offers and if found desirable, as a guide for conduct."⁴² As a process, Bayles identifies learning as "something which happens to persons,"⁴³ as distinct from inanimate objects such as trees, buildings, or cars. This "something" is a specific connotation or insight. Insight, then, is the cognitive aspect of behaviour that enables an individual to sense ways of accomplishing goals. The "need" to attain goals is an individual's wants, desires, or cravings and may lead to specific actions. As new insights are developed or older ones modified, learning occurs. On the basis of such learning, an individual may assume new attitudes or dispositions related in some manner to what has been learned.

Bayles' assertion may be reflected in the following example of a Mississippi riverboat captain who discovers that a section of the River, along his normal northbound route, is blocked by shifting sandbars. He considers this new situation and decides to bypass the sandbars by proceeding northward though the dangerously busy southbound channel. In such a situation, Bayles would likely contend that behaviour modification resulted from a change

in the captain's view of the "confronting situation". Such modification involved learning only in the sense that the captain "learned" of the existence of the sandbars. If, on the other hand, at some point along the journey, one of the crew falls seriously ill, the captain may decide to steer the riverboat southward to the nearest town. In this case, the change in behaviour is the result of a modification of the captain's goal, such modification growing out of his new insight into the sailor's condition. Again, as before, Bayles would likely contend that learning occurred in the sense that new insight was developed. There are also cases wherein an individual may develop a "realizing sense"⁴⁴ of a matter. Having attained such, the individual may be said to possess true insight.

Consider again the situation of the riverboat proceeding up-river. As the boat nears that section of the River previously found impassible, a crewman informs the captain of the existence of a previously unknown river that flows northward to the boat's destination. The captain weighs the alternatives, and decides to attempt passage over the newly known river. He discovers that the river is adequately deep and wide, and determines to make it a part of his regular route. In this instance, the captain has developed (or modified) his insight into the previously unused river. Bayles would likely contend that such an occurrence is an example of "learning."

Bayles' theory of learning is vital to this study in that it attempts to indicate precisely the kind of activity that results in learning. The riverboat captain of the example above, may have memorized the names of all Mississippi tributary rivers. However, it was not until the captain saw and sailed over the newly known river, that he tested the truth of his insight. In so doing he may have attained what Dewey nominated a "realizing sense" of the tested insight.

In each of the examples of Bayles' theory proposed above, the riverboat captain was presented with information that led to new insight or modification of previous insight.⁴⁵ The emphasizing of insight development or modification, however, does not appear to be a consistent characteristic of the rote learning technique. Instead, the emphasis for insight development or modification is preempted by concern for memorization of specific material. Such material, acquired through rote learning, has only the connotation of itself and nothing beyond. It is isolated knowledge and limited in its capacity to evoke further insight.

The assumption, that one will learn material if he will memorize it, is supported only when "learn" is interpreted to mean "memorize." This statement may appear tautological, but, as it relates to the question of rote learning's validity as a process capable of producing learning, it is important to recognize that

persons often equate learning with memory. If, however, "learn" is used in the sense of acquiring inferential knowledge, skill, or meaningful associations with previously developed cognitive structures, the rote technique is basically ineffectual.

The psychological and philosophical writings cited in this article seem to exhibit a common theme admonishing the instructor to teach more than simple facts; that is, to teach the student material that will have meaning in his "real world". Robert E. Halstead has analyzed the various plausible meanings of the slogan "teach for understanding."⁴⁶ He concludes his analysis by stating that "the concern expressed by the slogan is that if we teach specific facts and pay no attention to whether students are seeing the relationships among these facts and learning how to make these relations themselves ..., the world experienced by the students will be impoverished and often senseless."⁴⁷

Apparently, memorization of material is not always synonymous with its comprehension. Therefore, heavy utilization of rote learning in Nepal may produce superficial knowledge; that is, knowledge of material allowing rote recall, but deficient in "comprehension" as that term has been defined by contemporary educational psychologists. Furthermore, if such deficiency in comprehension so limits a student's appreciation of the potential interrelatedness of the material he has learned to other material previously learned as well as to material yet unknown, then his ability to associate new material with previously organized cognitive structures may be inhibited, and his capabilities as a learner thereby diminished.

Footnotes

1. D.P. Ausubel, Educational Psychology: A Cognitive View (New York: Holt, Rinehart, and Winston, 1968), p. 108.
2. H.D. Brown, "Cognitive Pruning and Secondary Language Acquisition," Modern Language Journal, 56, 4 (1972), 219.
3. R.C. Anderson, "Learning Principles from Text," Journal of Educational Psychology, 64 (1973), 26.30.
4. Brown, op. cit., p. 218.
5. R.C. Anderson, "How to Construct Achievement Tests to Assess Comprehension," Review of Educational Research, 42, 2 (1972), 145-170.
6. D. Bruce and J.J. Crowley, "Acoustic Similarity Effects on Retrieval from Secondary Memory," Quarterly Journal of Experimental Psychology, 9, 2 (1970), 190-196.

7. Gilbert Sax, E.G. Eilenberg, and A.F. Klockars, "Achievement as a Function of Test Item Complexity and Difficulty," The Journal of Experimental Education, 40, 4 (1972), 90-93.
8. R.M. Gagne, The Condition of Learning (New York: Holt, Rinehart, and Winston, 1970), pp. 210-214.
9. R.L. Politizer, Teaching French: An Introduction to Applied Linguistics (New York: Blaisdell Publishing Company, 1960), p. 19.
10. E.L. Thorndike, Educational Psychology: Briefer Course (New York: Bureau of Publications, Teacher's College, Columbia University, 1916), pp. 231-235.
11. D.D. Blaine and J.L. Dunham, "Effect of Availability on the Relationship of Memory Abilities to Performance in Multiple-Category Concept Tasks," Journal of Educational Psychology, 62, 4 (1971), 333-338.
12. W.A. Neilson, et. al., Webster's New International Dictionary (Springfield, Mass: G. and C. Merriam Company, 1960).
13. Brown, op. cit., pp. 218-222.
14. D.P. Ausubel, S.H. Schpoont, and Lillian Cukier, "The Influence of Intention on the Retention of School Materials," Journal of Educational Psychology, 48, 2 (1957), 87-92.
15. Brown, op. cit., p. 219.
16. Ibid., pp. 218-222.
17. Ibid., p. 220.
18. Ibid., p. 222.
19. Thomas F. Green, The Activities of Teaching (New York: McGraw-Hill Book Company, 1971), p. 140.
20. Ibid., p. 22.
21. Ibid.
22. Ibid.
23. Ibid., p. 24.
24. Ibid., p. 25.
25. Ibid., p. 28.

26. Ibid.
27. Ibid., p. 30.
28. Ibid., p. 31.
29. Ernest E. Bayles, The Theory and Practice of Teaching (New York: Harper and Brothers, 1950), p. 67.
30. Walter Feinberg, "The Limits of the Indoctrination Debate: or How Ordinary Can Ordinary Language Philosophy be and Still be Philosophy?" Paper Read at the Philosophy of Education Society Meeting, March, 1975, Kansas City, Missouri.
31. Ernest E. Bayles, The Insight Theory in Learning and Teaching (New York: Pageant Poseidon Press, Ltd. (in press), from Chapter 5.
32. Ibid.
33. David B. Guralnik, Webster's New World Dictionary of the American Language (New York: Popular Library, Inc., 1971).
34. D.D. Runes, Dictionary of Philosophy (Totowa, New Jersey: Littlefield, Adams and Company, 1974).
35. Ibid.
36. Ausubel, Educational Psychology ..., loc. cit.
37. Anderson, "How to Construct Achievement Tests ..." loc. cit.
38. Bayles, The Theory and Practice of Teaching, op. cit., p. 69.
39. Ibid.
40. Ernest E. Bayles, Pragmatism in Education (New York: Harper and Row, 1966), pp. vii-viii.
41. Ibid., p. 30.
42. Bayles, The Theory and Practice of Teaching, op. cit., p. 68.
43. Ibid., p. 66.
44. John Dewey, Democracy and Education (New York: The Macmillan Company, 1916), p. 272.

45. It is interesting to note that Robert M. Gagne, an educational psychologist, advanced a definition of learning in 1965 similar to that proposed earlier by Bayles. Gagne's definition appeared in his publication The Conditions of Learning (op. cit.), and is reproduced here in its entirety to avoid misinterpretation. He has written that "learning is a change in human disposition or capability, which can be retained, and which is not simply ascribable to the process of growth. The kind of change called learning exhibits itself as a change in behaviour, and the inference of learning is made by comparing what behaviour was possible before the individual was placed in a 'learning situation' and what behaviour can be exhibited after such treatment. The change may be, and often is, an increased capability for some type of performance. It may also be an altered disposition of the sort called "attitude", or "interest," or "value." The change must have more than momentary permanence; it must be capable of being retained over some period of time. Finally, it must be distinguishable from the kind of change that is attributable to growth, such as a change in height or the development of muscles through exercise."
46. Robert E. Halstead, "Teaching for Understanding," Paper Read at the Philosophy of Education Society Meeting, March, 1975, Kansas City, Missouri.
47. Ibid.

