# Using Contemporary Psychological Perspectives to Intensify the Involvement of Psychologists in Philippine Schools

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*This paper presents arguments for intensifying the involvement of psychologists in schools, particularly for the restoration of the psychologist's function of studying the learning process and for the greater integration and application of contemporary perspectives on learning to different components of the learning process. The paper first traces a brief history of the role of psychological theories of learning and intellectual performance in education. The most critical elements in the emerging theories of human learning and their implications for the various functions and elements of schools are then discussed. In particular, the paper describes how recent psychological research and theory give rise to new perspectives on (1) the characteristics of effective learning processes in the student, (2) the nature of knowledge, and (3) the role of the teacher. From the discussion of this perspective, the paper discusses concrete ways by which psychologists can contribute to the central training functions of schools and, more importantly, to guide the movement toward meaningful educational reform. In particular, the paper describes how psychologists can help in (1) teacher training, (2) designing learning environments, and (3) evaluating educational programs.*

Psychologists have long had an important place in Philippine schools. Foremost in the minds of most people, the role of guidance counselors in testing and providing student services in schools is recognized at all levels of formal education. Beyond providing counseling, testing, and assessment services, the contribution of psychologists has also been acknowledged in providing foundational knowledge of educational practice. In particular, psychology has provided the theories of learning upon which educational practice is based and rationalized. Unfortunately, this particular contribution of psychologists to educational systems seems to have been left in the lurch, so to speak, in more ways than one. It seems that psychological theories of learning are soon abandoned by most teachers after the standard foundations course on human learning is completed. Moreover, courses on human learning currently being offered in most teacher training institutions seem to be stranded in the late 1960s, when the canon of learning theories meant Piaget, and associationists and behaviorists like Thorndike, Pavlov, Watson, Skinner, and Hull. (Fairly recently, some teacher training institutions have began teaching the theories of Vygotsky, of Bruner, and of some constructivists.) This scenario has had the effect of marginalizing a possibly more active role of psychologists in schools.

In this paper, I present arguments for intensifying the involvement of psychologists in schools, particularly for the restoration of the psychologist's function of studying the learning process and for the greater integration and application of contemporary perspectives on learning to different components of the learning process. I first trace a brief history of the role of psychological theories of learning and intellectual performance in education. I then discuss the most critical elements in the emerging theories of human learning that have implications for how we view the various functions and elements of schools. In particular, I describe how recent psychological research and theory give rise to new perspectives on (1) the characteristics of the learning processes in the student, (2) the nature of knowledge, and (3) the role of the teacher. From the discussion of this new perspective, I then discuss concrete new ways by which psychologists can contribute to the central training functions of schools, and more importantly, to guide the movement toward meaningful educational reform. In particular, I describe how

psychologists can help in (1) teacher training, (2) designing learning environments, and (3) evaluating educational programs.

### *Psychological research and theory in schools: A brief history*

As psychologist Frank Farley (1993) cleverly stated, "Psychological science began with one foot in the schoolhouse door." He noted that some of psychology's most illustrious founders, like E.L. Thorndike and William James, had strong and active interests in education. Eventually, psychology played a more decisive role in the development of educational programs. Teacher educators Walter Doyle and Kathy Carter (1996) observed:

> Psychology...became not just a foundation for teaching but an undisputed element in teacher preparation and the substantive and methodological standard for all of educational inquiry. For most of this century, knowledge about things educational could have warrant only if it were generated using the designs and analytical procedures of scientific psychology framed in the language of the field (p.24).

Indeed, for a long time now, teachers speak about the students' learning in terms of principles of conditioning (from Pavlov, etc.) and reinforcement (Watson, Skinner, Hull, Miller, etc.), following principles of skill transfer and generalization defined by Thorndike and Judd, and viewing the students' abilities in terms of Piaget's stages of cognitive development.

This state-of-affairs is quite true even in the Philippine setting, as revealed in researches on Filipino students/learners (Ventura, 1994) and in educational discourse. Unfortunately, however, there seems to have been no movement in the integration of newer psychological theories of learning in educational practice in the Philippines. For example, in teacher education courses on theories of learning over the past couple of decades, there have been relatively little significant changes in the range of theories of learning introduced. Related to this observation, the theoretical frames used in researches on

how Filipino children learn seems to have not changed substantially from the 1970s to the 1990s (see studies reviewed by Ventura, 1994). This scenario creates the impression that we already know everything that we need to know about how students learn, in effect making the role of the learning psychologist superfluous.

To aggravate the situation, most of the learning theories taught in teacher education courses are derived from animal and laboratory experiments. Most people consider students to be profoundly different from rats and pigeons. Likewise, the laboratory setting is thought to be so many degrees removed from the classroom. These perception leads many educators to wonder about the relevance of such psychological theories for actual classroom practice, further marginalizing the possible role that psychologists may have in schools.

However, psychological research and theory on human learning did not stop with the associationists, behaviorists, and Piaget. In the past two decades, cognitive psychologists, developmental psychologist, and educational psychologist who have focused on development of cognitive functions in and out of schools have developed new theories of human learning that provide very different perspectives on how people come to acquire and develop various intellectual functions. These new perspective have given rise to new areas of study, like the area of instructional psychology, which relates the new ideas about human learning to educational practice and reform (Glaser, 1990). New educational programs designed to fit the characteristics of the learner have been developed and have come to be called "learner-centered" programs (Custer, 1994). In many other countries, educators have embraced these new contributions of psychologists and have started implementing such learner-centered programs with much success.

The new perspectives on learning and learner-centered educational programs are now slowly being introduced to Philippine schools and teachers. This paper is part of this gradual introduction. Although, it is most likely that most Filipino teachers already have some intuitive understanding of

some elements of these emerging perspectives. The purpose of more formally introducing these "new" concepts, principles, and strategies, is so that Filipino educators can more actively engage in discourse and practice with these new ideas.

### *New perspectives on the learning process*

**The student and the learning process.** In this section, I summarize how psychologists now answer the question: How do students learn? In the process, I will also contrast the contemporary perspectives with more conventional views.

The fundamental change in how psychologists describe the student learner involves the shift to an information-processing perspective (Bruer, 1993; Gardner, 1985; McGill, 1994; Simon, 1992). Many psychologists (and cognitive scientists) now assume that the human mind is a *processor of information*, similar to a computer. The mind has a varied system of operations similar to the routines of a computer program. The mind also has a sophisticated network of symbolic knowledge stored in memory, much like the symbolic information stored and used by a computer program. The mind receives (or encodes) information of various forms and the appropriate operations and symbolic information stored in the system will be used to transform the information. The transformation of information ultimately leads to cognition, feelings, beliefs, and actions.

Within this information-processing perspective, learning refers to the acquisition of new operations and symbolic knowledge or the re-structuring of old operations and knowledge. Based on extensive research work within this perspective, psychologists now understand where and how this type of learning is most effective (see e.g., De Corte, 1995).

For example, learning in an *active* and *constructive* process (see e.g., Brown, Collins, & Duguid, 1989; De Corte, 1995). Students do not simply take in or absorb information; rather, they construct their own knowledge

and skills by actively processing the information they encounter in various experiences and situations. The view of the student as a passive learner whose thoughts and behaviors are differentially reinforced or punished is no longer considered accurate. Instead, contemporary perspectives posit that students learn by means of effortful cognitive processing required for building understanding and proficiency in particular domains.

Moreover, students learn information and skills *cumulatively* (see e.g., Alexander 1996, Brown & Palincsar 1984, Gelman & Brown 1986, Glaser 1984). The most crucial point in this notion of cumulative learning is the significance of the student's prior knowledge in structuring and constraining future learning. Students always bring a range of relevant knowledge and skills to any new learning situation; it is never a *tabula rasa* for the student. This prior knowledge may come from both formal and nonformal learning experiences. Based on this prior knowledge, students are able to actively process new information, and to derive new knowledge and skills.

Learning is also controlled by the student, in other words, it is *self-regulated* (see e.g., Brown 1978, Pintrich 1996, Winne 1995). The teacher or other external agents cannot fully determine the course and character of the learning that will take place. Rather, it is the student who undertakes the required steps to learn, who controls the learning process, who provides self-feedback and performance judgments, and who keeps oneself focused and motivated. Most effective learning occurs when the student has the most control of his or her learning.

Students also learn more effectively when learning is *goal-oriented* (see e.g., Bereiter & Scardamalia 1989). That is, learning is best facilitated when the student is explicitly aware of the goals of learning, particularly when the students determine their own goals. However, learning can also be effective if an external agent (e.g., a teacher or a textbook) advances a goal for learning, provided that these goals are adopted by the students themselves. Clearly, learning a subject matter for its own sake will not always be a meaningful goal for the students.

Recently, the notion of learning as *situated in social and cultural practice* has gained more support in the psychological community (see e.g., Chaiken & Lave, 1993; Collins, Brown, & Newman, 1989; Lave & Wenger, 1991; Vygotsky, 1978). This view assumes that people learn by participating in community practices and activities. In other words, learning is socially mediated; the learner gradually constructs new knowledge in the process of interacting with a group of people who share in practice and use of this knowledge. This notion runs contrary to conventional assumptions that learning and knowledge acquisition is a purely mental process that goes on in the mind of an individual.

Finally, learning is *individually different* (see e.g., Ackerman, Sternberg, & Glaser, 1989). Even after describing some general principles regarding how students learn, the outcomes and specific processes of learning still vary among students. The differences are brought about by individual differences in basic aptitudes like prior knowledge, learning styles, learning potential, interests, beliefs about learning, self-efficacy, and so on.

In summary, the emerging perspective of the student learner is one who is actively processing information and constructing knowledge on the basis of prior knowledge. The student learns through a process that is constructive, cumulative, self-regulated, goal-oriented, situated in social and cultural practices, but is also individually different in systematic ways.

**The changing character of knowledge.** Recent research into the learning process has not only redefined the nature of the learner and the process of learning; it has also led to a new understanding about what needs to be learned. New perspectives have also emerged regarding what knowledge is and the significant role of the learner's knowledge in guiding the learning process.

The conventional views regard knowledge as consisting of static information about facts, concepts, and principles within a particular area or domain of study. The more recent perspectives, however, consider this

type of knowledge as just one among a larger set. Educational psychologists Ton De Jong and Monica Ferguson-Hessler (1996) for example, describe four types of knowledge: conceptual, procedural, situated, and strategic knowledge. They distinguish these four types of knowledge in terms of their particular function in problem solving and thinking within a learner's domain of study.

*Conceptual knowledge* refers to the type of knowledge described in the previous paragraph. These facts, concepts, and principles within a domain have the function of providing additional information that the learner may add to the problem and use to perform the solution. *Procedural knowledge* refers to the actions, operations, and manipulations that the learner can apply in a particular domain of study. The learner may use procedural knowledge to combine bits of information in the problem to generate new information, or to apply conceptual knowledge to make an inference about the information in the problem. The procedural knowledge functions to advance the knowledge state of the learner about the problem solution. *Situated knowledge* is knowledge about the typical situations or contexts within a domain. This type of knowledge can help the learners sort out the information in the problem in terms of what is relevant and what is not. This type of knowledge can also tell the learner about the additional bits of information that are needed. This type of knowledge can also provide a scheme for organizing the information in the problem. Finally, *strategic knowledge* refers to general plans of action regarding the sequence of solution activities. This type of knowledge enables the learner to organize their problem solving process by specifying the steps that need to be followed to arrive at the solution.

These different types of knowledge could further be distinguished in terms of their different qualities. For example, knowledge can be either explicit or implicit (Gelman & Greeno, 1989, Sternberg & Wagner, 1989, Wagner & Sternberg, 1986). *Explicit knowledge* can be expressed and stated, whereas *implicit knowledge* is used to drive problem solving in a domain but cannot be easily expressed. Consequently, while explicit knowledge can be easily tested, conventional tests do not usually reveal implicit knowledge.

Related to the preceding distinction is the difference between automated and nonautomated knowledge. *Nonautomated knowledge* is seen in the performance of novices who very deliberately, consciously choose information and execute procedures in a step-by-step process when solving problems in a domain. But for experts, the same knowledge has been changed into a continuous, fluid, and seemingly automatic process, hence the term, *automated knowledge* (Anderson, 1983; Klahr, 1984).

Knowledge is also usually distinguished in terms of levels, ranging from deep to superficial (see e.g., Glaser, 1991). *Deep knowledge* is usually associated with causal and/or principled understanding, abstract thinking, critical analysis, judgment, and evaluation. *Superficial knowledge* is typically associated with rote learning, reproduction, and trial and error.

A most important quality of knowledge is its structure or organization. The *structure of knowledge* determines the efficiency with which the different types of knowledge can be used. Among more advanced learners, knowledge in a domain is organized into schemata (Larkin, McDermott, Simon & Simon, 1980). These schemata typically contain more deep knowledge which allows the learner to build a more rational, hierarchical structure of knowledge than can be easily applied to different problem situations (Bernardo, 1994). With novice learners, knowledge is usually organized around superficial knowledge and are prone to faulty applications.

I should also emphasize the links between the new perspectives of knowledge to the recent views about the learning process described in the previous section. In particular, the notion that learning is cumulative underscores the importance of existing knowledge for guiding and constraining future learning (Glaser, 1984). The rate of learning and the type of knowledge learned may be either expedited or delayed by the learners' existing knowledge in the domain. Finally, the notion that learning is situated in social and cultural practices also implies that knowledge is often constructed and defined by activities and practices in one's culture and society (Lave & Wenger, 1991).

**Redefining the role of the teacher.** Educational psychologist and teacher educator, Anita Woolfolk Hoy (1996) described the beliefs that many prospective teachers hold about teaching and learning. The following are some of those beliefs she enumerated:

Teaching is *telling*—in clear and interesting ways.

Teaching is *directing*—leading activities.

Teaching is *engaging students*—getting their attention, arousing curiosity, selling ideas, connecting with students' interests, being creative.

Teaching young children is *nurturing*—helping students feel good about themselves as they develop social skills.

Teaching is an *interpersonal* skill that involves being fair, kind, flexible, and loving.

Teachers will be effective if they are knowledgeable, clear, creative, interesting, organized, directing, and caring.

When learning doesn't happen, differences are due in large part to students' home background or teacher's failure to be clear and interesting.

A similar set of characteristics were found in a 1981 survey of perceptions of the ideal teacher conducted among the five initial member countries of the ASEAN (ASEAN Development Education Project, 1986, in Cortes, 1993, p. 1). The top 10 attributes and competencies identified in the survey were (1) proficient in language of instruction; (2) skillful in teaching methods; (3) maintains order/ disciplines; (4) skillful in evaluating pupil achievement; (5) skillful in use of community resources; (6) skillful in counseling; (7) skillful in adapting curriculum materials; (8) mastery of subject taught; (9) skillful in asking questions; and (10) skillful in doing research.

In the Philippines, the same survey showed that the five competencies of the ideal teacher are the same as the ASEAN list (Cortes, 1984). In particular, proficiency in the language and skill in teaching method were also ranked first and second. However, mastery of subject or discipline taught was ranked third. Skills in maintaining order and discipline in class and in evaluating student achievement were ranked fourth and fifth, respectively. Quick reference to some of the basic characteristics of the learning, the learning process, and the types and qualities of knowledge that need to be learned immediately suggest that these beliefs about teaching and learning are not nearly complete and sometimes even inaccurate. Indeed, the new perspectives on learning and on knowledge now demand that we think of the task and the role of the teacher in different ways. For example, given the principle of self-regulated learning, the belief that teaching is "directing and leading activities" can no longer be maintained. Similarly, given that learners have to acquire a varied set of knowledge types, teaching cannot simply be "telling in clearer and interesting ways." Likewise, a student's failure in meeting the learning objectives could be due to wide range of factors related to the individual student's learning activities, and not simply due to the fact that the teacher was not "knowledgeable, clear, creative, interesting, organized, directing, and caring" or due to the "students' home background."

It seems that the task of the teacher is more complex than transmitting information. But in a nutshell, we can describe the task of the teacher as that of creating opportunities for learning (Lave & Wenger, 1991) and orchestrating subject matter, student, and environment factors so as to facilitate the learning process (Anderson, et al., 1995). Anderson and colleagues describe the contemporary psychological perspectives about the teacher as follows:

> a teacher...is able and disposed to consider how learners' knowledge, motivation, and development contribute to the meanings they make, the actions they take, and what and how they learn in classrooms...A teacher...thinks about how the social and instructional contexts of classroom (e.g., subject-matter instruction and assessment, classroom

management systems) affect and are affected by individual students' knowledge, learning, motivation, and development (Anderson, et al., 1995, p. 145).

Of course, all of this makes the task of the teacher substantially more complex. The task of teaching can no longer be described in terms of a prescribed set of technical skills. A contemporary psychological perspective on teaching demands that the teacher constantly make deliberate, frequent, and possibly immediate decisions. These decisions relate to managing the variety of events and the influx of ideas in the classroom as the students are being engaged in productive learning activities. Therefore, the teacher is no longer just the source of knowledge who directs the course of learning. Rather, the teacher is now a manger of information and activities in the classroom that will facilitate the learning of the students.

### *New roles for psychologists*

As I observed in the opening parts of this paper, psychologists in the Philippines have been pigeonholed as counselors, psychometrician, and test developers. While the contributions of psychologists in this function of educational institutions is established, I assert that psychologists can play a more active role in the more academic functions of schools. In particular, psychologists can draw from the contemporary perspectives about learning and knowledge to help in designing effective learning programs, tasks, and learning for schools. In the remaining section of the paper, I will describe three areas in which psychologists can play a more active role in the academic functions of schools: (a) teacher training, (b) designing of learning tasks, and (c) evaluation of educational programs. However, one can easily consider how psychologists can also apply the same principles that underlie the contemporary perspectives on learning to other functions like curriculum design, development of textbooks and instructional materials, and so on. the three specific areas discussed below are intended to be illustrations and not the prescription of boundaries. In fact, given the emerging perspectives

about learning, psychologists can interpose themselves in even more academic functions of schools. The psychologists' creativity and resourcefulness are probably the only limits.

**Teacher training.** Teacher education programs in the Philippines are guided by specific policies and standards defined in the Ministry of Education, Culture and Sports Orders No. 26 (June 1983) and No. 37 (August 1986). The 1983 Order specifies that teacher education programs are expected to produce teachers who can possess the following characteristics (in Cortes & Savellano, 1992, pp. 2-3):

1. an effective conveyor of organized knowledge which has developed from human experience through the ages, such as language, mathematics, and natural science, history, geography, literature and the fine arts, civics and culture;

2. an efficient promoter and facilitator of learning that will enable the learners to develop to the fullest their potentials for a continuing pursuit of self-education; and

3. a true humanist who possess[es] a clear understanding [and] appreciation of the genuine human ideas and values that elevate the human spirit, refine human nature, and contribute to the human being's unending quest for fulfillment.

This provision of this policy is quite impressive in terms of capturing the complexity of competence required of the teacher. Indeed, it seems to be generally in consonance with how we earlier described the contemporary psychological perspective of the functions of the teacher. To ensure that prospective teachers can acquire these three broad prescriptions, both the 1983 and 1986 Orders specify the instructional standards, course descriptions, and other pertinent requirements for teacher education programs.

An integral part of such programs is the requirement that prospective teachers take a course or two on educational psychology and/ or theories of learning. The presumption is that such courses will provide foundational knowledge that the prospective teachers will use when they eventually become classroom teachers. Unfortunately, such courses are taught at a point where prospective teachers still have no means of connecting the principles to actual experience and practice. Moreover, field observations (Burke & McCann, 1993) suggests that these subjects are often taught by faculty members "who have little or no experience of teaching at either first or second [elementary or high school] levels, who do not visit students on practice teaching, and who are, therefore, unlikely to be able to make critical connections between the content of their courses and the context of actual teaching. Hence, the knowledge about how students learn remain decontextualized and abstract and are left underappreciated by most teachers.

This observation is substantiated by results of surveys on teacher education programs (Philippine Association for Teacher Education [PAFTE], 1985; UNESCO Regional Research Project, 1986) that show how a large number of the studies' respondents (administrators, faculty, students, and alumni of teacher education institutions) perceived that such foundational courses described above do not provide students with an understanding of the teaching-learning process. (Notably, a significant number of respondents claim that General Psychology gives the students an understanding of the teaching-learning process. This finding clearly opens an opportunity for psychologists who wish to be more involved in teacher training.) Moreover, the PAFTE survey indicated that most students and alumni of teacher education programs have a neutral attitude towards courses on Educational and Developmental Psychology; although they dislike such courses, these students and alumni did not like them either. When asked about why they like certain courses, the primary reason provided was that these courses help them in their preparation and profession as teachers. Hence, the respondents' most preferred courses are those that train them in the principles and methods of teaching. We can infer that the same respondents were not keen on how the Educational and Developmental Psychology courses could help in their training as teachers.

Based on the earlier discussion of the new role of the teacher, it is no longer sufficient that the prospective teacher be trained in "doing" the technical skills involved in teaching. Given the profound complexity of a teacher's practice, the training of teachers should be directed towards enabling teachers to engage the many demands of teaching practice. One of the foremost means of attaining this goal is by providing the prospective teachers with a workable perspective regarding students, how students learn, the nature of knowledge, and the demands of teaching practice, which are, incidentally, the very topics discussed in the first parts of the paper. Anderson, et al. (1995) refer to this task as the goal "to develop a teacher's psychological perspective" (p. 145). These perspectives should provide the conceptual tools with which the teachers can develop their own knowledge about teaching. The teachers can draw from the different elements of this perspective of learning, choosing the most appropriate principles to guide the teaching activity, applying them carefully, and seeking feedback about how students are responding (Anderson, et al., 1995).

In this regard, psychologists can play a very active role in preparing and training prospective as well as practicing teachers. Psychologists can work with teacher educators to ensure that prospective teachers acquire the contemporary psychological perspectives relevant to the practice of teaching—concepts and principles that will complement their training in teaching skills. More importantly, psychologists and teacher educators should enable prospective teachers to make their stance as regards these concepts and principles and apply them judiciously. Psychologists should also work with teacher educators in designing more effective teacher training curricula as well as continuing education programs for teachers. An important feature of such curricula should be that more concrete links are made between the theoretical and foundational courses, especially about the learning process, and actual classroom teaching practices.

**Design of learning tasks and learning environments.** The notion that learning is situated implies that the classroom is a specific context in which learning can take place. That being the case, it is important to consider the nature of the environment for learning and the activities in the classroom in

which the students will participate because it is through participation in this classroom environment and activities that students come to construct their knowledge. A problem is that the learning environment in schools is starkly different from the natural learning environment in real life situations (Bernardo, 1995). The discrepancy often leads features of the school learning environment to inhibit the natural learning processes in the students. Hence, there should be a more deliberate effort to design learning environments in the classroom to ensure that learning in the classroom is not discontinuous with learning outside the classroom, and instead supports and complements the same.

Contemporary psychological perspectives about learning environments, tasks and activities in the classroom are guided by the characteristics of the learner and the learning process. The principles of effective learning described in the earlier section of the paper are learning processes that are "in" the students. The problem that confronts the educator is to design the learning environment so that it would elicit these processes from children. Hence, these learning environments and tasks are often referred to as "learner-centered." For example, consider the following general design principles recommended by instructional psychologist Erik de Corte (1995, p. 41-42):

1. Learning environments should support the constructive cumulative, goal-oriented acquisition processes in students. This also indicates that such environments must be designed to develop and enhance more active learning strategies in passive learners...a powerful learning environment is characterized by a good balance between discovery learning and personal exploration on the one hand and systematic instruction and guidance on the other.

2. Learning environments should foster student's self-regulated learning processes ... external regulation of knowledge and skill acquisition in the form of systematic interventions should be gradually removed so that students become agents of their own learning.

3. Student's constructive learning activities should preferably be embedded in contexts that are rich in cultural resources artifacts, and learning materials that offer ample opportunities for social interaction, and that are representative of the kind of tasks and problems to which the learners will have to apply their knowledge in the future.

4. Learning environments should allow for the flexible adaptation of the instruction support, especially the balance between the self-discovery and direct instruction, or between self-regulation and external regulation, to take into account the individual differences among learners in cognitive aptitudes as well as in affective and motivational characteristics.

Regarding specific learning tasks and activities that can be used in these learning environments, Anderson, et al. (1995) propose the following considerations which are more specific applications of the same general principles proposed by de Corte.

First, tasks should *provide multiple representations of key ideas across situations.* An important consequence of the situated character of learning is that knowledge does not easily transfer from one context to another. The best means of allowing students to see the importance of an idea or a skill for a variety of situations is by engaging students with these ideas in a variety of situations. In the process, the teacher should help the students see what is similar and dissimilar about those situations, and how the significance of the ideas varies from one situation to the next. A practical implication for actual teaching practice regards the amount of content that can be covered in a course. Within allowable constraints, the teacher will therefore have to make decisions regarding which ideas are the most important to include in a course.

A set of tasks (though not necessarily every task) should *feel authentic, representing as much of the complexity of the domain as is possible without*

*overwhelming students.* It is important to make the students realize and appreciate the embeddedness and interrelatedness of ideas in any domain. By using authentic tasks, as opposed to simplified tasks, the teacher is forced to consider simultaneously as many dimensions of the topic and to engage the students in thinking in the same way. A concrete example of an authentic task is analyzing cases. Analyzing good cases can be an effective means for engaging students in complex thinking and reflection of one topic. Whenever ideas need to be introduced out of the context of their ultimate use, the teacher should make sure that the ideas are eventually integrated with other relevant ideas using more authentic tasks.

Tasks should also be *designed to help the students make explicit their own beliefs and conceptions,* and *to engage them in explaining their own beliefs and considering alternative points of view.* To allow learners to have greater control of the process of knowledge construction, it is important that they first realize what their existing knowledge and beliefs are in a specific topic. Tasks can be designed to require students to explain publicly their beliefs, explicit theories, and reasoning about specific actions and decisions they have made. It is important that a public sharing is made within a context which respects individual ideas. Only in such context will the public expression and revision of thinking can happen, and personal thinking can develop meaningfully. This public expression need not be an oral task. In fact, writing tasks are actually advantageous because the teacher can carefully consider the student's arguments before responding.

Tasks should *create opportunities for public interaction among the students and between the teacher and the students.* As learning is socially mediated, tasks should be designed so that students could interact with other learners and other individuals who have more knowledge about a domain. The students' knowledge can develop in the process of public discussions in which ideas are presented, and reactions and questions are addressed by others. In the process of reflecting the exchange of information, a learner could construct new knowledge. The role of the teacher in these interactions is more critical. The teacher should insure that the exchange involves genuine exchange and prompts further thinking, and not just a directionless activity.

Finally, tasks for *grading and assessing student learning should be authentic and congruent with the other four consideration.* Students need to be evaluated in terms of how well they are moving towards thinking like experts in a domain of study. hence, the means of assessing the student's knowledge cannot just be confined to test questions that require students to remember pertinent items in a book or the lectures. Assessment measures should require the use of knowledge to analyze situations, consistent with the four previous principles for designing learning tasks. Moreover, grading might be inappropriate for tasks that are very difficult, challenging, and potentially threatening. Grading should not be in the way of the "students' willingness to engage complex situations, try out new ideas, render personal beliefs explicit, and respond to others about their ideas and beliefs" (Anderson, et al., 1995, p. 153).

Psychologists can play a very important role in assisting teachers design such learning tasks and environments. While it is the teacher who has to make the decisions regarding the use of specific tasks in the classroom, the psychologist can serve as a "consultant." The psychologists can help the teacher assess the specific complexities of the students' characteristics, the subject matter, and the classroom situation. The psychologist can also help the teacher design learning tasks, materials, and activities. The psychologist can help evaluate and critique the tasks and materials in terms of their effectiveness in attaining the desired learning objectives. All these forms of assistance, the psychologist can provide by using the principles underlying the contemporary psychological perspectives on the learning and teaching process.

**Design and evaluation of educational programs.** Psychologists can also play an important role in designing and evaluating entire educational programs. Educational programs are implemented at different levels, from experimental teaching strategies or reading materials used in specific classrooms to new curricular requirements in schools nationwide.

In many countries, such as Singapore, Venezuela, the United States, Canada, and several Western and Northern European countries, psychologists

have been important members of groups that design and implement educational reform programs. These psychologists have contributed their knowledge about psychological principles underling effective learning and instruction to rationalize programs for reform of educational practices and materials.

In the Philippines, some psychologists have been involved in the evaluation of educational programs in their capacity as experts in testing and psychological assessment. Beyond this function, psychologists can also use the new perspectives on learning and knowledge to asses the effectiveness of current and proposed educational programs. Such programs can be assessed not only in terms of whether or not they meet the desired objectives (e.g., minimum test scores required). Psychological knowledge can also be used to determine which parts of the educational program work towards attaining the learning objectives and which do not. More importantly, psychological knowledge can also be used to ascertain why those elements that work to help students meet the learning objectives are effectual, and also why those that do not work are insufficient. In this way, the utility and impact of such programs can be maximized. The significance of such efforts cannot be overemphasized particularly in cases where educational reform is most imperative.

## Summary and conclusions

In the first section of the paper, I briefly reviewed the history of the use of psychological theory in educational practice. Then, I discussed the contemporary psychological perspectives regarding how and why learners learn and acquire knowledge effectively. Such principles are consistent with a constructivist perspective on learning. Finally, I described specific ways by which psychologists can play a more active role in the academic function of schools.

Philippine psychologists have already distinguished themselves in their contributions in providing counseling services in schools and in developing and utilizing psychological measures in the school setting.

Philippine psychologists also contribute to the integral educational function of developing the minds of our youth so that they will grow to be empowered and productive contributors and collaborators in efforts directed towards the development of our nation and the improvement of the well-being of other people. These are certainly very lofty and noble goals. That is why we psychologists should be so honored and grateful that there is yet another role for us in the collective effort towards realizing these goals.

**This article is an expanded version of a paper presented in the Regional Conference of the Psychological Association of the Philippines at the Ateneo de Davao University, Davao City, January 7, 1997. The preparation of this article was supported in part by a Spencer Fellowship from the National Academy of Education (USA). The author thanks Ms. Suzette Aliño for sharing some of her observations about teacher education, and Dr. Emetria Lee for sharing her research materials on teacher education in the Philippines.**

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