Educational Psychologist

Developing Students' Appreciation for What Is Taught in School

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This article elaborates a presentation made upon reception of the E. L. Thorndike Career Achievement Award in Educational Psychology from Division 15 of the American Psychological Association. It considers how value aspects of motivation apply to efforts to develop students' appreciation for school learning. Currently, we have only limited knowledge about situations that afford opportunities for learning school content with appreciation of its value, how to exploit those affordances, or even their benefits to learners. We need to develop our theorizing about the benefits that students may derive from learning in school and determine what curriculum makers and teachers might do to foster students' appreciation for these benefits. Teaching for appreciation requires ensuring that what is taught is worth learning, explaining the value of this content and modeling its applications, and scaffolding learning by engaging students in activities that allow them to experience its valued affordances.

Most issues in motivation in education can be classified within three major categories. First are issues relating to the *social milieu* in which the learning takes place (questions about classroom climate, learning community, classroom goal structures, etc.). Second are issues relating to the *expectancy* aspects of individual students' motivation (questions such as "What are my chances for succeeding here?" or "How can I protect my reputation if I fail?"). Third are issues relating to the *value* that individual students place on engaging in a learning activity or gaining whatever benefits successful completion will bring (questions such as "Why should I care about this?" or "What will I get out of it?").

Everyone recognizes that all three categories of issues are important. Yet, as the field developed, the social milieu aspects and the expectancy aspects got a lot of attention, but the value aspects did not. We know a lot more about establishing productive learning communities and about avoiding or addressing expectancy problems than we know about helping students to appreciate the value of what they are learning. For example, suppose that we are asked for advice by a teacher who wants to teach *King Lear* (or the U.S. Constitution, or photosynthesis) in a way that motivates students not only to remember key ideas but to appreciate Shakespeare (or civics, or biology). That is, the teacher wants students not merely to retain the content taught but to value it and want to learn more about it.

Most work on motivation would not take us very far in formulating a response to this teacher. Work on the social milieu points to the importance of making students feel a sense of belonging and well-being; meeting their needs for autonomy, competence, and relationships (self-determination theory); and maintaining mastery-goal rather than performance-goal structures (goal theory). Work on the expectancy aspects indicates that the content and learning activities should be at an optimal level of difficulty (neither too easy nor too hard), and the teacher should orient students toward attributing their learning progress to internal and controllable factors (attribution theory), developing positive self-efficacy perceptions (self-efficacy theory), and viewing their abilities as incrementally improvable rather than fixed and limited (Dweck, 1999).

This is all useful advice, but it does not address the question posed. Except for difficulty level, these principles do not identify aspects of curricular content domains or learning activities that might affect students' appreciation of their value.

Addressing value requires attention to the learners' beliefs and feelings about the content, as well as the processes involved in learning and applying it. Until recently, only a few lines of theory and research did this. *Expectancy x value* theorists (Feather, 1982; Pekrun, 1993; Wigfield & Eccles, 2000) noted that our willingness to engage in an activity

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voluntarily is a product of the degree to which we value the activity (or its outcomes) and the degree to which we expect to be able to complete it successfully. *Interest* theorists (Hidi & Renninger, 2006; Schraw, Flowerday, & Lehman, 2001) noted that individuals tend to engage more productively in activities they find more interesting. *Intrinsic motivation* theorists (Vansteenkiste, Lens, & Deci, 2006) noted that better motivational and learning outcomes can be expected when learners engage autonomously in self-chosen activities than when their task engagement is externally coerced and regulated.

These theories have addressed the learners' thoughts and feelings about content domains and learning activities, but to date, their applications have not yielded much information about how teachers might help students to appreciate the value of what they are learning. Most of the research has focused on value, interest, or intrinsic motivation as independent variables. The researchers measure learners' preexisting value, interest, or intrinsic motivation as it relates to a learning activity, then make predictions about individual differences in the learners' engagement patterns. However, they rarely seek to establish and nurture such motivation where it is not already present.

Another problem is that value concepts tend to be defined in ways that limit their applicability to learning situations. Definitions of valuing typically focus on utility value (e.g., engaging in an activity to acquire a skill or certification that is needed to advance one's career goals). They seldom emphasize experiences such as the satisfaction of achieving new insights, aesthetic appreciation of the content or skill, or awareness of its role in improving the quality of our lives. Meanwhile, definitions of interest or intrinsic motivation tend to focus on their affective aspects (e.g., fun, pleasure, or enjoyment) without paying much attention to their cognitive aspects (e.g., absorption, satisfaction, self-realization).

Measurement instruments reflect these definitions and are not very specific or penetrating. Usually, they are confined to simple Likert scales featuring items such as "I enjoy science," or "Science is important."

In my own writing on the motivational aspects of school learning, I have advocated shifting focus from intrinsic motivation to *motivation to learn*, defined as engaging purposefully in curricular activities by adopting their goals and thus trying to learn the concepts or master the skills that they were designed to develop. Students who are motivated to learn will not necessarily find learning activities pleasurable or exciting, but they will find them meaningful and worthwhile and will take them seriously by trying to get the intended benefits from them. Recently, others have begun to make similar distinctions.

In particular, Alan Waterman (2005) distinguished between two forms of enjoyment that may be derived from activities: hedonic and eudaimonic. *Hedonic* pleasures can be experienced through simple participation, without engaging in effortful or goal-oriented action sequences. Examples include dining at a restaurant, watching television, or window shopping at a mall. *Eudaimonic* pleasures result from sustained goal-oriented efforts, especially during activities that challenge us to realize our potentials. Examples include rock climbing, composing music, acting on stage, and writing computer code.

Experiences of flow or of personal expressiveness are two common forms of eudaimonic pleasure. *Flow* experiences are associated with a balance between challenges and skills, whereas feelings of *personal expressiveness* are associated with opportunities to experience self-realization (especially during identity-related activities that allow us to express our daimon, or true self). Among activities that are commonly viewed as interesting or intrinsically motivating, some only offer the potential for hedonic pleasures, but others offer the potential for both hedonic and eudaimonic pleasures.

To summarize this introduction, theory and research on motivation in education do not have much to say about how to help students appreciate the value of what they are learning. Many of our most prominent theories do not even address value issues, and the others have not been applied in ways that speak to questions about how to scaffold such appreciation.

This situation has begun to change recently, as expansion of older theories and proliferation of new ones have fueled unprecedented attention to the value aspects of motivation. I have reviewed much of this work in a recently completed book chapter (Brophy, in press). In the rest of this article, I draw on some of this work and synthesize it with other ideas to articulate a position on conceptualizing and studying what is involved in helping students to appreciate the value of school learning.

I argue that currently we have only very limited knowledge about situations that afford opportunities for learning school content with appreciation, let alone about how to exploit those affordances, or even about the benefits that learners might derive from doing so. I conclude that developing this knowledge is likely to require collaboration between people like ourselves (who are conversant with psychological research methods and relatively generic aspects of motivation) and people with special interests in school subjects (learners capable of articulating what is worth learning about these subjects, and teachers capable of articulating ways of scaffolding the learning so as to enable students to recognize and appreciate good reasons for valuing what they learn).

SPECIFYING AND DELIMITING THE PROBLEM SPACE

This argument is part of a much larger argument that ultimately involves integrating the cognitive and motivational aspects of learning. To help maintain a focus on helping students appreciate the value of what they are learning, I define some key terms and stipulate some exclusions and assumptions.

TABLE 1
General Model of Situational Activity, Elaborated to Show Motivational Aspects of K–12 Content Learning

General Model of Situated Activity	Motivational Aspects	Optimal Situations for K–12 Content Learning
Situation = Milieu/Context in which activity takes place	*Motive* = Reasons for being in that situation, doing that activity	*Situation* = Classroom (or other milieu suitable for this activity)
Activity = Goal-oriented action sequence that exploits situation's affordances	*Goal* = Intended outcome of engagement	*Autonomously motivated activity* = Acquisition and use of K–12 content
Role = Network of schemas for carrying out the activity	*Strategy* = Means of attaining goal(s)	*Role* = Activate relevant schema network(s)

I limit the argument to the learning of *K–12 content*—the knowledge, skills, attitudes, and dispositions taught in the four major school subjects in grades K through 12 (language arts, mathematics, science, and social studies). I believe that the argument also applies to learning in other subjects (such as art, music, or physical education); in postsecondary, military, industrial, or technical education; and in most other learning situations. However, these involve complications that are beyond the scope of the article, so I focus on learning in K–12 classrooms.

The argument applies to situations that feature explicit or at least implicit learning goals. It does not apply to situations that are purely recreational or social, or that require work that is limited to familiar routines. It applies most directly when the value of the learning is not obvious to the learners.

The learning of reading, writing, swimming, or other basic skills has obvious utility to almost everyone, including most primary grade students. However, as John Dewey and others have pointed out, most K–12 content originated as practical knowledge derived through situational problem solving, but as it got systematized within what became the disciplines, it got formulated more abstractly and separated from its situated origins (Hansen, 2006). Consequently, for much of what we teach in school, especially the more abstract content and higher order processes, the reasons for learning it are not obvious to students, and sometimes not even to teachers. This analysis highlights situations in which what is taught is worth learning, but students may not appreciate its value unless their learning is scaffolded in ways that help them to do so.

To simplify the analysis, I stipulate that the only problematic aspects of the learning situation involve value issues, not social milieu or expectancy issues. That is, envision learners who are taught by a caring teacher and feel a sense of belonging and well-being within a supportive learning community. The performance expectations they face are well within their zones of proximal development, and their learning progress is well scaffolded at each step, so there is no reason for them to experience anxiety or fear of failure. They are comfortable and confident in the learning situation, but they may be wondering what is the point of this, why are we learning it, or how does it relate to anything I care about.

SCHEMATIC MODELS

The table and figures provide schematic models for analyzing these learning situations more closely. The left column of Table 1 shows a general model of situated activity. It indicates that *situations* are contexts within which activities take place. *Activities* require engaging in goal-oriented action sequences that exploit the situation's affordances. They incorporate *roles* that people play as they carry out the activity. In the context of school learning, the situation is a classroom, and the activity is learning K–12 content. This activity subsumes two major roles: the teacher is there to teach and the students are there to learn.

The middle column of Table 1 depicts motives, goals, and strategies that parallel situations, activities, and roles. Generally speaking, the *motive* is the person's reason for being in *that* situation and engaged in *that* activity, the *goal* is the intended outcome of this engagement, and the *strategy* is the means the person uses to attain the goal (it is a network of schemas activated for that purpose).

The right column of Table 1 depicts optimally motivated school learning. The situation is the classroom, the activity is autonomously motivated acquisition and use of K–12 content, and the learners engage in this activity by activating relevant schema networks. Most of what is included in Table 1 should be self-evident, but the concepts of situational affordances and autonomous motivation require elaboration.

Reference to *situational affordances* is needed to clarify the nature and locus of motivation. In everyday language, we commonly say that we engage in intrinsically motivated activities "for their own sake." This is not true. We do not engage in valued activities for *their* sake; we do it for *our* sake—because we derive pleasure, satisfaction, or some other valued benefit from doing so. Motivation resides in people, not objects or activities. If we have been enjoying an intrinsically motivated activity but then have to stop the activity and leave the room, the motivation leaves with us.

As a subjective human experience, motivation is not something that can be possessed by school content domains or learning activities. However, these curricular features do possess affordances for human activities. Their affordances carry

motivational implications for people who engage in the activities.

The potential for appreciating the value of K–12 content lies in the affordances it offers to learners. The most notable affordances are (a) the insights and understandings afforded by the big ideas that anchor content networks, and (b) the information-processing, problem-solving, and decision-making opportunities afforded by activities designed to develop and apply these big ideas. If a curriculum strand has significant value for learners, it will be because its content network is structured around big ideas that provide a basis for authentic applications to life outside of school.

My reference to *autonomous motivation* is taken from Deci and Ryan's self-determination theory, which distinguishes among the following forms of behavioral regulation:

1. *External regulation* occurs when our actions are regulated by external rewards, pressures, or constraints (students engage in lessons or assignments solely because they will be rewarded if they do or punished if they do not).
2. *Introjected regulation* occurs when we act as we do because we think we should or would feel guilty if we did not (students engage primarily because they know that if they do not they will get poor grades and disappoint their parents).
3. *Identified regulation* occurs when we adopt an activity or goal as personally important and valuable to us (students engage primarily because they view the learning activities as important for their self-selected goal of gaining admittance to college or a particular occupation).
4. *Intrinsic motivation* occurs when our actions are experienced as wholly self-determined and performed out of interest or intrinsic motivation (students engage because they find the content interesting or the activity enjoyable).

External regulation and introjected regulation are considered *controlled* forms of motivation, whereas identified regulation and intrinsic motivation are considered *autonomous* forms. Autonomous motivation is preferable to controlled motivation because it is associated with better cognitive and affective outcomes. When students are autonomously motivated to engage with K–12 content, they do not require external sanctions or pressures; they engage voluntarily because they see good reasons for doing so (Vansteenkiste et al., 2006).

In the language of Table 1, students who are autonomously engaged with K–12 content recognize its affordances for worthwhile activity, so they follow through by activating schema networks that enable them to carry out this activity. They understand that engaging with the content offers opportunities to experience valued benefits, so they follow through by doing the things that enable them to reap those benefits.

I use the language of *schemas* here to underscore that developing and especially using knowledge ordinarily requires doing something with the content (e.g., engaging in reflective processing of the content, connecting it to current knowledge, drawing inferences, noting self-relevance, etc.). To highlight value aspects of learning, I focus on why and how learners use the content, depicting them as active processors and appliers, not passive recipients. Although activating schema networks involves fluency and other aspects of competence, my focus here is not on developing or displaying competence, but on *activating schema networks for valued purposes*.

The emphasis on acquiring and activating schema networks also reflects my focus on learning goals. This argument is not just another call for making curriculum and instruction more relevant to students. It does include recognition of the motivational value of connecting with students' current interests and agendas (as well as teaching within their current zones of proximal development), but it does not begin with the students. Instead, it begins with curricular aims, purposes, and goals. It calls for articulating the knowledge, skills, values, dispositions, and appreciations that are intended as outcomes of particular K–12 content strands, then asking how these strands might be represented and how students' learning of them might be scaffolded in ways that encourage realization of the intended outcomes. Fundamentally, it focuses on crafting curriculum and instruction to scaffold students' development toward those outcomes, not limiting curriculum and instruction to cater to students' current interests and agendas. Furthermore, those outcomes include changes and acquisitions in the motivational aspects of learning (i.e., certain content-related values, dispositions, and appreciations), not just the knowledge and skill aspects.

The model represented in Table 1 refers to a limited time, such as a single lesson or perhaps a unit. Figure 1 brings in the developmental dimension. It notes that the potential for addressing a curriculum strand's content goals and carrying out related activities will evolve as learners gain familiarity and competence with the content. Developing awareness of, and the ability to exploit, the affordances of a major topic in
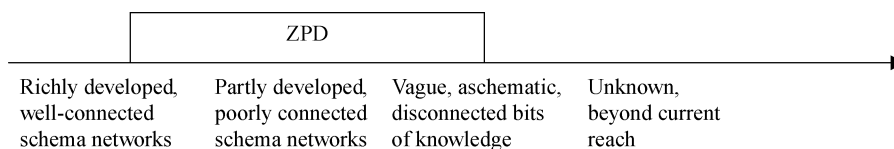

FIGURE 1   Levels of awareness of affordances for enacting particular activities/roles with K–12 content given the learner's current knowledge.
Note. ZPD = zone of proximal development.

one of the school subjects might involve months or even years of working up through trajectories and integrating across networks of accumulated knowledge. Learners might have richly developed and well-connected schema networks for the most familiar and basic aspects of the topic. For less familiar or more advanced aspects, their knowledge bases would be less richly developed and less well connected. For still less familiar or more advanced aspects, they might have only vague, disconnected, and aschematic knowledge. Finally, some aspects might be unknown to them or beyond their current capacities for understanding.

In Piaget's terms, learners can proceed easily and mostly *assimilate* when they are making small accretions to already richly developed schema networks, but they will have to struggle and mostly *accommodate* when they get into less familiar territory. In Vygotsky's terms, curriculum should focus on the *zone of proximal development* (ZPD)—content for which students do not already possess clear understandings but can learn efficiently with help from their teacher.

SCAFFOLDING APPRECIATION WITHIN THE MOTIVATIONAL ZPD

The connection of all this to motivation is brought out more clearly in Figure 2, which shifts attention from an individual learner at a given point in time to individual differences in knowledge of the full extent of the content domain. It shows how experts have progressed much further than novices along trajectories of potential learning in the domain. It also indicates that the knowledge that learners acquire includes *propositional, procedural*, and *conditional knowledge*. Procedural knowledge includes intellectual skills used to process, manipulate, and regulate the application of propositional knowledge, not just behavioral skills used to carry out related physical actions.

A central assumption to my argument is that *our basis for appreciating the value of particular K–12 content lies in our conditional knowledge of when, where, and especially why* we would want to activate schema networks that relate to this content. This goes directly to motives and goals. *If a schema network includes conditional knowledge indicating that activating it will serve our personal agendas, we will be autonomously motivated to enter situations that afford opportunities to engage in these valued activities*.

The three forms of knowledge do not necessarily progress together in tandem, so it is common for people to have one or two of them without the other one or two. For example, most children have enough propositional and especially conditional knowledge about driving cars to lead them to appreciate the value of learning to do so, but it will be some years before they acquire the procedural knowledge needed to enable them to drive. Unfortunately, schools provide frequent examples of a contrasting pattern: students learning facts, concepts, and even skills without learning when, where, or why they might use them.

An important point to note here is that *everything in Table 1, Figure 1, and Figure 2 applies as much to motivation as to cognition*. Just like our propositional and procedural knowledge, our conditional knowledge about whether and how a situation affords opportunities for us to engage in valued activity can progress from vague and disconnected to richly schematic. It also can progress to higher levels of sophistication: Experts have access to domain-specific insights *and satisfactions* that novices do not.

The ZPD concept applies to motivation as well (Brophy, 1999, 2004). Students already appreciate the value of K–12 content that lies below their current motivational ZPDs. Other content lies within their motivational ZPDs, so they can come to appreciate its value if their teacher scaffolds their learning experiences accordingly. Still other content may be too far removed from their current base of knowledge and experience to allow them to learn it with appreciation in the near future.

The motivational implications of all this appear straightforward, at least conceptually. The main theoretical implication is that, for each major step in each trajectory of knowledge about each K–12 topic included in the curriculum, *teaching guidelines should refer to all three types of knowledge* in identifying intended learning outcomes. By teaching not only the what and how but the when, where, and why, teachers can enable their students to learn with appreciation of the value of what they are learning. For researchers, the challenge is to learn more about situational affordances for acquiring and using K–12 content in ways that serve valued human purposes, then develop ways to enable students to exploit these affordances with appreciation of opportunities to engage in worthwhile activities.
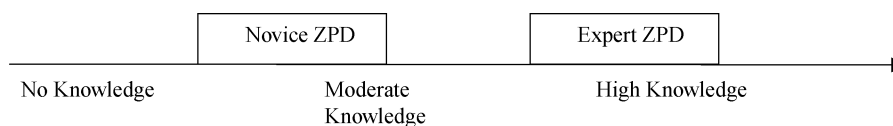
FIGURE 2   Levels of awareness of affordances for enacting particular activities/roles with K–12 content, relative to the full range of affordances. Knowledge may be propositional (what), procedural (how), or conditional (when, where, why). Bases for appreciation of value lie in conditional knowledge of when, where, and why to use the procedural knowledge to apply the propositional knowledge, especially in the service of self-relevant agendas.

BARRIERS TO IMPLEMENTATION

Although straightforward in concept, this agenda will be difficult to implement. Several significant barriers would have to be overcome, beginning with the school curriculum.

Need for Curricular Reform

People assume that the curriculum reflects consensus beliefs about what is important for young people to learn—that it empowers them with knowledge, skills, attitudes, and dispositions that enable them to function effectively in modern society. However, current curricula have been described as mile-wide but inch-deep, trivial pursuit, or parade of facts. Furthermore, even when a K–12 content strand does have significant potential value, it may be taught in a way that is too abstract or otherwise ineffective to enable students to appreciate it.

Curricular content might be classified within one of five categories with respect to its potential for student appreciation:

1. Content that has value that students already recognize and appreciate (i.e., it lies below their current motivational ZPDs).
2. Content that has value that is recognized by curriculum makers and teachers and lies within the students' current motivational ZPDs, so it can be taught in ways that lead students to appreciate its value.
3. Content that has value that is recognized by curriculum makers and teachers, but the potential for appreciating it lies beyond the students' current motivational ZPDs.
4. Content that has value and potentially could be taught within the students' ZPDs (at least at certain grade levels), but curriculum makers and teachers currently cannot articulate this value clearly enough to enable them to represent it effectively in instructional materials or scaffold students' appreciation of it during teaching.
5. Content that lacks significant value (and therefore does not belong in the curriculum).

I believe that students currently do not appreciate or value much of what they learn at school primarily because a lot of it fits into the last category—it lacks sufficient value to justify including it in the curriculum. We often hear that learning is its own reward. However, this saying assumes that whatever we learn, including what is taught in school, is worth learning for at least one good reason. I submit that there is no good reason for K–12 students to learn a lot of the specialized vocabulary, unnecessary detail, and sheer trivia that is included in most school curricula, nor for engaging in activities such as alphabetizing the state capitals. We need to prune this kind of pointless content from the curriculum.

I also believe that much of the school curriculum fits into the fourth category: It does have potential value, but we have lost sight of the reasons for including it. We need to rediscover and articulate the life-application bases for retaining this content and teach it accordingly.

Need to Cultivate Students' Content Appreciation

Another significant barrier is that even if curricula were perfected to the point that all of their content had significant life application value, *many of the activities that this content affords serve motives and goals that are not well represented in popular ideas about the value aspects of motivation*. Most popular ideas about motivation, and until recently even most theoretical concepts, have overemphasized affective elements and underemphasized cognitive elements. That is, when we talk about motivation, we usually refer to fun, pleasure, enjoyment, or excitement. These terms, and the images they suggest, are well suited to recreational activities but not to activities focused on acquiring and using K–12 content. Even when we talk about the value of the latter activities, we tend to talk about immediate, direct, and specific applications rather than more generic but less obvious applications.

K–12 content *does* afford opportunities to engage in activities that do have significant value and deserve to be appreciated accordingly. *However,* this value is best described using terms such as *enrichment* or *empowerment,* not *pleasure* or *fun*. It involves activities that are more intellectual than physical, and we engage in them less for hedonistic pleasure than for purposes such as self-expression or self-realization.

It is relatively easy to interest students in topics that most people find captivating or exciting, to whet their anticipation of activities that most people find fun, or to enable them to see the utility value in knowledge or skills that have straightforward applications. However, it can be challenging to enable them to recognize and appreciate the value of many of the experiences afforded by K–12 content.

Instead of physical thrills, basic emotional reactions, or immersion in multisensory overload, the subjective experiences that occur during acquisition and use of K–12 content involve absorption, satisfaction, recognition, making meaning, self-expression, self-realization, making connections, achieving insights, aesthetic appreciation, and so on. These experiences are potentially very compelling and highly valued, but they usually do not emerge spontaneously upon mere exposure to the content or even involvement in application activities.

These subjective experiences are not observable, so the schema networks that make them possible will need to be developed by teachers, using combinations of *explanation*, *cognitive modeling* (verbalizing the thinking that guides autonomously-motivated acquisition and use of the content), and *scaffolding* of students' engagement in activities that afford opportunities for the experiences, in ways that help the students to recognize and exploit these affordances.

It is commonly said of some learning experiences that the students "don't appreciate it now, but they will when they

get older." I am arguing that this idea is misguided—that the curriculum at a given grade level should feature content that is at or below the students' current motivational zones of proximal development, so they can learn it with appreciation of its value right now. I am also suggesting, however, that scaffolding such appreciation is challenging because it must rely on sources of motivation that are not familiar to the general public and may take a lot of time and effort to develop, even by teachers who have clear ideas about what to develop and how to scaffold it.

At least three steps are most likely involved in helping students to recognize and exploit the affordances of K–12 content:

1. *Curriculum development* (make wise choices about what content and learning activities to include, to ensure that what the students are asked to learn is worth learning).
2. *Lesson framing* (introduce lessons in ways that include explaining the value and modeling applications of the big ideas or skills to be developed).
3. *Scaffolding appreciation* (engage students in activities that afford opportunities for them to develop and apply this content in ways that enable them to discover its value through firsthand experience with it, and scaffold their engagement so as to help them to notice and appreciate the activities' empowering affordances).

NEEDED RESEARCH AND DEVELOPMENT

Currently, our educational system is not well prepared to implement these steps, because neither curriculum makers nor teachers nor motivational researchers possess well-articulated recognitions and appreciations of the potential affordances of K–12 content.

I regard this as the most significant gap in our current knowledge about motivation in education, but one that we can begin to address successfully if we collaborate with subject matter specialists and K–12 teachers. *To the extent that we can articulate the enabling affordances of K–12 content domains and learning activities*, we can provide a theoretical base to inform curriculum makers' and teachers' efforts to help students appreciate their value.

Some general examples of what I mean are as follows. Science affords opportunities to learn about how the physical world works, including many principles that are counterintuitive. Its laboratory aspects afford opportunities to replicate significant experiments or demonstrate significant principles through activities that include manipulations using scientific tools and equipment.

Geography affords opportunities to learn about how landforms, climate, and other aspects of locations create affordances and constraints for human activities at those locations. It also affords opportunities for learning about the reasons

for variations in human economic and social activities across locations and cultures.

Mathematics offers opportunities for quantifying and precisely specifying relationships, as well as for appreciating their symmetry and other aesthetic qualities (music also offers some of the latter affordances).

Literature affords opportunities to learn about the components of good stories (plot elements, foreshadowing, closure, tragic flaws, etc.), as well as about psychology and the human condition (e.g., how different kinds of people are likely to respond to particular situations, with what probable outcomes for themselves and others). Literature also affords opportunities for readers to escape their current circumstances by temporarily immersing themselves in other lives and, in the process, to explore potential identities and possible selves by putting themselves in the places of key characters and pondering how they would react in the depicted situations.

History offers similar opportunities for learning about the human condition and empathizing with individuals faced with challenging situations. It also offers potential for inducing "lessons of history" and even relatively profound insights, such as that the basics of the human condition and certain fundamental needs and wants (food, shelter, clothing, communication, transportation, etc.) have remained constant throughout human history, even though everyday activities have evolved considerably as a result of discoveries and inventions.

Writing affords opportunities not only for creative expression and communication with others but for articulating and preserving ideas or observations of personal importance.

These generic affordances should be reflected and elaborated in the teaching of each of the major topics and skills included within each of the K–12 subjects. Theoretically, each of these major topics and skills is included in the curriculum because it is considered to be knowledge of enduring value. Where this assumption is valid, the content strand should afford opportunities for self-relevant applications to life outside of school (thus providing a basis for teaching for understanding, appreciation, and life application).

Note the emphasis on self-relevant applications. Although there are societal (social and civic) benefits to empowering each new generation with knowledge and skills of enduring value, these benefits will not be realized unless individual students appreciate the enduring value and begin to apply the knowledge and skills in their lives outside of school. Scaffolding K–12 content in this manner also is crucial for optimizing individual students' motivation. When developed effectively, reading and writing are not just basic skills needed for utilitarian applications but gateways to interest development, identity exploration, self-expression, and other enrichments to individuals' subjective lives. Similarly, basic geographical, historical, social, and scientific understandings are not isolated bits of inert knowledge but key components of schema networks that individuals use to understand and respond to the social and physical world. Well-developed

K–12 content not only has narrowly construed utilitarian value (helping people to meet their basic needs and wants) but enriches the quality of their lives by expanding and helping them to articulate their subjective experiences.

An Example: Teaching About Government

For example, consider the topic of government. Governments have continuing and direct effects on all of our lives, so the topic should be of interest to most if not all students. Yet it often is taught so dryly as to bore or even alienate students. However, in research and development conducted in collaboration with social studies educator Janet Alleman and primary teacher Barbara Knighton, I have found that even primary students can learn basic ideas about government, not only with understanding but also with appreciation.

Some elementary teachers, especially primary teachers, shy away from teaching about government because they believe that their students are not interested in or ready for instruction in the topic. It is true that most elementary students will not respond well to abstract theories about government or to some of the drier traditional content such as a lesson on how a bill becomes a law. However, even young children are very interested in issues of fairness and justice (as can be seen when they learn about slavery or past restrictions on women's rights). We also have found them to be responsive to lessons about the basic reasons for and functions of government (rather than abstract political science concepts or details of governmental procedures).

To help students understand why governments are needed and what they do for their people, we recommend developing instruction around the basic idea that people need governments to provide essentials that are too big, complicated, or expensive for them to provide for themselves. These include national defense and the armed forces; roads, airports, and transportation infrastructure; education from kindergarten through university levels; the criminal justice system; police protection and emergency services; parks and recreation facilities; the postal service; standards and regulations regarding product quality and safety; safety net services for people with special needs; and so on. The tax money that is collected to pay for these services supports the common good.

An effective way to develop such appreciation is to prepare a photo essay illustrating events occurring in a typical day in the life of one of the students in the class and underscoring the role of government in facilitating these activities. For example, the photos might depict the child getting up in the morning wearing fire-resistant pajamas (per government regulations); washing using purified running water supplied by local government; changing into clothes inspected for quality and safety; eating a breakfast consisting of foods inspected for quality and safety; boarding a safety-inspected, government-provided bus driven by a licensed driver; traveling to school on government-maintained roads patrolled by the local police force; attending school in a government-owned building; participating in learning activities taught by government-supplied teachers using government-supplied materials; and so on.

Initial ideas about alternative forms of government can be developed by contrasting our system of representative democracy (leaders are elected to limited terms and must act within constitutional guidelines) with systems in which leaders ascend to power through other means (inheritance, military power), hold office indefinitely, and exercise totalitarian power. Contrasts can be brought home through discussion or simulation of what it is like to live in countries where there are no elections or at least no secret ballots, where access to desired housing and jobs requires continued government approval, and where people who resist government policies are subject to arrest.

Some of the details of how our system works are best addressed around election times via mock elections following study of some of the issues and the reasons why different stakeholders would prefer one candidate or policy over another. Using examples easily understood by children, instruction can help students learn that debates about laws or policies often focus on means–ends relationships and trade-offs rather than ultimate purposes (e.g., people who agree with the ultimate purpose of a proposed law or policy might nevertheless oppose it because they do not believe that it will accomplish the purpose or that whatever good it accomplishes will not be worth the costs in higher taxes, new restrictions on individual freedoms, etc.).

Teachers can convey basic information about taxes and address likely confusion of taxes and utility bills by sharing and leading discussions about their own personal documents. Most of the students will be familiar with sales taxes at some level, but showing the amounts added to the purchase price as listed on store receipts will help bring home the fact that sales taxes are attached to most purchases and provide a sense of the relative amounts involved. Similarly, sharing property assessments and local tax bills will help students understand how local governments raise money for schools and community services. Support of the federal (and if relevant, the state) government through income taxes can be made concrete by showing paycheck statements indicating that employers keep track of the taxes that their employees owe and deduct this money from gross pay to send to the government.

Once the students have developed some basic knowledge about common forms of taxation, where tax money is sent, and what is done with it, teachers can share utility bills and lead discussion of what is being purchased from utility companies, how it is used, and how the companies keep track of what customers owe them. Class discussion would be followed up with home assignments calling for students to interact with their parents in locating and observing the meters that measure water, gas, and electricity usage, as well as inspecting and discussing tax bills, utility bills, store receipts, and related documents.

Instruction about the civic aspects of government might begin with emphasis that students are members of a classroom community as well as a larger community that incorporates their homes and businesses. As members of the classroom learning community, they are expected to follow rules designed to help people get along, keep things fair, protect individual and school property, and keep people safe. The larger community has laws for similar reasons. Political office holders make sure that life in the community allows people to carry out their daily activities in a safe and orderly environment. Students might be introduced to local leaders through guest speakers who visit the classroom, field trips to government offices, or studying photos and listening to taped interviews.

The students might learn that the community leaders have three basic jobs: make plans and laws, solve problems, and make the community a pleasant place to live. Legislators make the laws that need to be followed by everyone. Some laws protect people's rights, some protect property (e.g., zoning ordinances), some protect health (e.g., pollution ordinances), and some promote safety (e.g., speed limits).

Laws help guide our lives and remind us of our responsibilities toward other people. They are enforced by police and judges who are part of local government, but they are intended to make the community a better place, not merely to limit individuals' behavior. To make this concrete, students might discuss why particular laws exist (e.g., considering what would happen if people drove at any speed they wanted and ignored stop signs). Once students have developed a basic understanding of and appreciation for local government, they are ready for lessons on state and national government and on voting and other aspects of responsible citizenship and for comparisons of different forms of government.

Finally, the learning might include encouragement of and opportunities for practicing good citizenship. Some of these might involve government (e.g., writing to appropriate government leaders to suggest new laws or express a position on a current issue). Others might involve service learning (e.g., participation in antilitter, recycling, or other volunteer activities), rationalized with the explanation that governments cannot be expected to do everything and good citizens contribute to the common good as individuals. For a unit on government that incorporates these and other basic ideas, see Alleman and Brophy (2003).

CONCLUSION

Significant new theory and research on value aspects of motivation in education have appeared in recent years, so there is much to celebrate. However, much remains to be done. Advances in two areas are especially needed to make our work more valuable as input to curriculum makers and teachers.

First, we need to *expand and deepen our theorizing about the potential benefits that students may derive from their learning in school.* Powerful ideas expand and enrich the quality of students' subjective lives. They provide lenses through which to construe their observations and experiences, schemas into which they can assimilate novel elements, connections they can make and draw inferences from, potential for recognizing and appreciating the aesthetic qualities of the objects or events they encounter, and so on. Big ideas and associated intellectual skills also empower them with tools for processing information, solving problems, and making decisions efficiently. These empowering and aesthetic educational outcomes are applicable to a broad range of situations experienced throughout life, in contrast to the more specific outcomes usually associated with the term utility value.

In addition to improving our conceptualizations of the value of K–12 content that students might come to appreciate, we need to *determine what curriculum makers and teachers might do to foster such appreciation.* In short, we need to *conceptualize and develop rich examples of what it means to work within the motivational zone of proximal development, to scaffold students' learning experiences in ways that help them appreciate the value of what they are learning.*

I think that motivational researchers interested in pursuing these agendas will do so most effectively if they collaborate with people who already have well-developed interests in particular content domains. Professors in the arts, humanities, and sciences immediately come to mind as articulate sources of ideas about the value aspects of their disciplines. Their usefulness for the purposes outlined here may be limited, however, unless they can meet two qualifications: They can focus on the relatively basic concepts and skills included in K–12 content, and they can project themselves into the role of consumer of this basic knowledge (via its applications to everyday life), rather than focusing on their own specialist role as producer of new knowledge at the frontiers of the discipline. My experience has been that many professors have difficulty doing this unless they teach basic survey courses with emphasis on enticing students to major in their field.

Consequently, undergraduates who have decided to major in a subject or pursue it in graduate school may be better sources of ideas about its affordances and applications. Similarly, teachers who specialize in the subject may be more able to talk about how to represent its content and scaffold K–12 students' learning in ways that enable them to appreciate its value.

Only a few such studies have appeared so far. In one, mathematics educators found that mathematics majors and nonmajors had similar perceptions of basic mathematical principles and procedures, but the mathematics majors reported more enjoyment of the subject (its rigor and precision, timelessness, abstraction, and unique challenges). Mathematics majors also reported more appreciation of its beauty (the elegance of mathematical arguments or proofs, the way that mathematical ideas develop and build on one another, the interrelatedness of its concepts).

Finally, mathematics majors reported more engagement in mathematical activities for recreational purposes (enjoying mathematical games and puzzles, reading about the lives of famous mathematicians; Meyer & Eley, 1999).

Studies of teachers selected for their effectiveness in fostering appreciation for their subject have shown that they are more likely than other teachers to use techniques such as making abstract content more concrete and personal, connecting it to students' interests and home backgrounds, modeling interest and enthusiasm, emphasizing applications to life outside of school, discussing careers in the field, and offering "minds-on" learning opportunities that allow students to develop and discuss content-related opinions or explanations (Blumenfeld, Puro, & Mergendoller, 1992; Dolezal, Mohan Welsh, Pressley, & Vincent, 2003; Mac Iver, Young, & Washburn, 2002).

The field needs many more such attempts to articulate which aspects of K–12 content are most worth learning, what makes them worth learning, and how teachers can scaffold students' appreciation of their value. In the meantime, we might go a long way toward ensuring attention to this gap by reviving a practice that was common early in the 20th century: including *appreciations* (of why what is being taught is worth learning) along with knowledge, skills, attitudes, and dispositions, as *intended outcomes of instruction*. This would help to ensure that *appreciation goals are addressed routinely* during instructional planning. It also would serve as a reminder to curriculum makers, teachers, and motivational researchers that indeed *there should be good reasons for teaching the content or skills that a lesson develops, and we need to articulate those good reasons during instruction.*

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