Pardon Me, Didn't I Just Hear a Paradigm Shift?
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A Paradigm Shift?

Our standard view of school-based learning is teacher-directed, but the author sees a convergence of evidence that the old paradigm is about to give way in favor of a new model of self-directed learning.

BY MAURICE GIBBONS

ARMEN hurried out of her classroom and grabbed my arm. “I thought you’d like to know that I’ve decided to make my classroom completely brain-compatible!” she told me emphatically. I was surprised. Carmen is a longtime, straight-ahead middle school science teacher with a computer full of lesson plans, a rack of videos, a file drawer packed with worksheets, and plenty of attitude about “trendy changes.” When I asked her what she would be doing, she was quick to answer: “Students learn the lesson best when it’s connected to their personal experiences and when we start from what they already know, so that’s where I’m starting our next unit on the solar system.”

I was going to ask what methods she might use to help everyone connect, but she was already moving on. “Kids comprehend new material quickest when they can use their unique abilities, so I’m including activities in my lessons for as many of the nine intelligences as I can. I’ve even written a ‘planet rotation rap’ for us to sing.”

I was curious about her other applications of the


Illustration: Artville
research, but Carmen was into her list and not about to be stopped. “We know the brain is pattern-seeking, and since days, seasons, and eclipses all arise from patterned relationships, I’m adapting my lessons to emphasize them.” She was demonstrating the positions of imaginary suns, earths, and moons as she talked and hurried to the next feature of her scheme. “Because the brain needs to be challenged to get sharp and stay sharp, I’m setting tasks at different levels of difficulty and challenging my students to take on the most ambitious ones they think they can handle.” She looked up at me, smiling, and I was nodding. Her ideas all seemed workable and worthwhile, but something was naging at the back of my mind.

Something wasn’t quite right. The applications didn’t fit snugly with the principles; the connections were possible but not necessary. I started looking for an alternative perspective, and then I saw it — another equally appropriate way to apply the principles of multiple intelligences, connection to the familiar, pattern-seeking, and challenge. From the concept of the nine intelligences, for example, we might infer the message that we must provide students with lessons and course alternatives that enable them to apply and develop their greatest talents.

But if I step out of my classroom box and back away from familiar practice, I see a different imperative. The many descriptions of learning styles, Howard Gardner’s recognition of multiple intelligences, and the studies of strengths from the Gallup polls by Marcus Buckingham and Donald Clifton all imply the same message that arises from psychological studies: students, like the rest of us, are unique in their experiences, perceptions, drives, and capacities. This means that students should approach learning in an equally unique way that enables each of them to make the best use of his or her nature, strengths, and accumulating competence. From the concept of uniqueness in the person comes the message that there should be uniqueness in the program, but what whirling dervish teacher, even in fast forward, could possibly deliver a separate lesson for each individual learning style? Accommodating such diversity seems possible only if students play a much more active part in selecting and designing their own learning activities.

When research shows that students learn better when new concepts are connected to their personal experiences, teachers can try to establish those connections in their lessons, but surely the appropriate experiences will be as diverse as the students’ preferred approaches to learning. With a shift in perspective, we can also see that students naturally connect new content to their personal knowledge and experience when they themselves decide what to learn next. When students decide or help decide, learning is rooted in their experience, not just connected to it.

If our brains are pattern-seeking, we can emphasize the patterns in what we teach, but then the teacher is the pattern seeker. Shouldn’t we be teaching our students to seek out patterns themselves? Science is the search for replicable patterns that lead to concepts; art is the search for, or invention of, unique patterns that lead to original visions and works. The energy that propels our species is curiosity: the brain not only organizes, it wants to organize, to find the pattern that reveals the answers to our questions. Shouldn’t our courses and lessons be designed to lead our students into the pattern-seeking process and guide them through it? And that is where challenge comes in. We can invite students to select the most challenging task among those we assign, but the trick of the alert though ag-
ing nuns of Mankato, Minnesota, is that they challenge themselves to pursue their own stimulating activities throughout their lives. And isn’t that the secret of learning — pushing ourselves to take on risky new tasks that are achievable, conducting excursions into our fields of ignorance or passion in order to extend our knowledge and ability?

If I think of these ideas together — individual approaches to learning, relating learning to personal experience, seeking patterns, and pursuing challenges — I see a model quite different from Carmen’s thoughtful applications. I see the possibility of teaching students to challenge themselves to pursue activities that arise from their own experiences and to employ their own emerging styles to find patterns of meaning and processes of productivity that lead them to a high level of achievement and fulfillment.

The prime imperative, at least in these few applications, is not to enhance teacher-directed learning, but to develop a more student-directed model.

I did not say anything about this to Carmen, but I wondered if other recent research and argument confirmed this conclusion — that self-directed learning is brain-, mind-, body-, and life-compatible and that it would be reasonable to say, “Pardon me, didn’t I just hear a paradigm shift?”

HAS THE PARADIGM SHIFTED?

I confess that researching this conclusion and asking this question are not accidents. My interest in self-direction is long-standing; early in my career I published the “Walkabout” article in the Kappan, and my latest book is the Self-Directed Learning Handbook. Nevertheless, anyone interested in the development of new school programs has to find the question compelling. Do recent studies in neurology, cognition, developmental psychology, and other related fields provide evidence that the paradigm of learning we apply to schooling should be shifting toward self-direction? In The Structure of Scientific Revolutions, Thomas Kuhn observed that the accumulation of anomalies to an existing paradigm presages a shift that will occur when the exceptions are synthesized into a new paradigm. I believe that the anomalies present in the teacher-directed model are gathering and that they are consistent with a model of self-directed learning, even though it is difficult to see this shift when you are, like Carmen, standing in a conventional classroom. I do not presume to present a comprehensive review of the literature, but I do propose that there is an interesting accumulation of support for self-directed learning.

Many conclusions drawn from research on the brain have been itemized and translated into recommendations for enhancing the teacher-directed classroom. Here are 11 typical items. The human brain:

* is unique in each individual;
* seeks meaning;
* seeks and generates patterns;
* responds to stimulating environments;
* responds to active involvement;
* involves both conscious and unconscious activity;
* interacts with emotions and psychological functioning in general;
* connects new experiences to familiar experiences and structures;
* receives data through both focused and peripheral perception;
* responds to challenge; and
* is inhibited by threat and anxiety.

Each of these characteristics can be translated into teaching guidelines. To accommodate uniqueness, for example, it is recommended that teachers design instruction to suit several different learning styles or intelligences. In response to the meaning-seeking function, teachers may be advised to turn course concepts into questions and a collaborative search for answers. Teachers are urged to turn their classrooms into rich environments for learning; to accommodate peripheral perception with posters, concept maps, and other adjuncts to their lessons placed around the room; and to involve students by organizing group work and other participatory activities. Teachers are also advised to promote positive attitudes, to encourage students to be aware of their feelings, and to guide students through a process of self-observation to review what they have learned and to study the procedures they are employing. In addition to helping students find connections between the lesson and previous learning and experience, teachers are encouraged to challenge students while maintaining a relaxed, nonthreatening environment.

All of these recommendations promise benefits for the teacher-directed classroom and its historical focus on what might be called the “academic curriculum.” However, if we look at the brain’s qualities and propensities not as guides to improving teacher-directed learning but as signposts for what education should be like, we see a strong recommendation for personal, self-directed learning. If by unique we mean that each brain operates differently and learns best in its own way, for its own purposes, and toward its own ends; if by meaning-seeking we are suggesting that the brain is driven to find meaning in experience and to render it into concepts in our developing knowledge base; if by stimulating environments we mean those that provide the real experience, complexity,
and opportunity that enhance learning; if by pattern-seeking we mean the organizing capacity that enables individuals to sort, sequence, and explain the complexities in their experiences; if by active involvement we mean participation in consequential activities with others; if by interaction with the unconscious and feelings we mean learning to reflect for self-understanding, self-guidance, and self-motivation; and if by challenge we mean taking the initiative and the risk to reach as close to the limits of our capacity as we dare — if all the foregoing are reasonable applications of the characteristics of the human brain — then we are describing the practice of self-directed learning.

One theme of cognitive science is metacognition — thinking about thinking, becoming aware of and gaining control over our thoughts. Studies in metacognition have led to a number of applications in teacher-directed learning. Some of these focus on teaching students to relate academic success to personal effort rather than to chance. Other applications emphasize teaching self-regulation: students learn to manage their own participation, studies, and assignments efficiently. Still other applications emphasize teaching students learning strategies, processes, and systems that they can apply to a range of tasks and situations — in other words, teaching students how to learn. And teaching students how to learn is the first step in equipping them to be self-directed. Metacognition is the engine that drives self-directed learning: students learning to think for themselves, set goals, make plans, take action, assess results, and reflect on the significance of their experiences. Agency in their thoughts and actions is inseparable from agency in their lives, relating what they are learning to themselves and to their futures. Teaching students to direct their thinking, to manage their learning, and to relate it to their lives is peripheral to teacher-directed studies but central in self-directed learning.

The psychology of development outlines a second curriculum, a "developmental curriculum," that is of central interest to students, especially adolescents, but is not a shaping factor in programs based on the teacher-directed model. The main theme of the developmental curriculum is change — change in students, change in their relationships with those around them, and change in their place in the world. They must address the task of determining who they are and who they will be. That is, they must face the crisis of identity formation — the shaping of their personalities and the consolidation of their values expressed as character. Both research and observation tell us that adolescents experience this struggle while their brains are convulsing into working order, hormonal storms are blowing them into a new world, and their bodies are lurching into adult form. They are in the throes of leaving childhood behind and becoming adults. Relationships with adults and peers change, and looming ahead is the great chasm they must cross between the comfort of home and the wild, inhospitable world in which they must make their way. This is a powerful, experiential curriculum. Self-directed learning — by combining freedom with responsibility, reflection with action, and challenge with opportunity — is very compatible with these demands of development.

A third curriculum might be called the "social curriculum." Students have a number of interpersonal tasks to accomplish. They need to interact with others to learn about themselves, to learn adult social skills, to accomplish what individuals can’t, and to learn from one another. David Johnson and Roger Johnson summarize these values in Learning Together and Alone.

There is a great deal of research indicating that, if student-student interdependence is structured carefully and appropriately, students will achieve at a higher level, use higher-level reasoning strategies more frequently, have higher levels of achievement motivation, be more intrinsically motivated, develop more positive interpersonal relationships with each other, value the subject area being studied more, have higher self-esteem, and be more skilled interpersonally.

In self-direction students often learn with other students in partnerships, groups, teams, seminars, and advisories; they often learn with adults in the community as well as in the school; and they learn from extended travel and cooperative work in the field. Learning to accomplish tasks with others is excellent preparation for doing them independently, just as working together prepares students for the social nature of family life, work, and recreation. Self-directed learning is very compatible with this social curriculum.

Self-direction is immobile without self-motivation and blind without self-assessment. Self-motivation provides the drive that propels students through their pursuits; self-assessment provides the feedback that keeps them on course and sustains their intensity. We need a body of literature on self-motivation, but Martin Ford’s excellent book Motivating Humans gives us a good start. As Ford says in summarizing the research, “little else matters if there is no goal in place.” The most effective goals are challenging, have many possible valuable outcomes, and are influenced by potent “personal agency beliefs.”
These include capability beliefs (Can I do it?), context beliefs (Will this activity be supported by a responsive environment?), and strong emotions related to the goal. People sustain their efforts best in a flexible environment that permits adjustment, problem solving, and improvements. Fortunately, the basic approach to self-directed learning has many aspects of self-motivation built into it: students are taught to draw on their strengths and to pursue passionate, personal goals; they learn in receptive, responsive environments; they work within a system of constructive feedback, support, and assistance from others; they train in skills, processes, and systems that empower them to be productive; and they experience success under their own direction in real-world situations.

We could examine other fields; studies of successful people all suggest the characteristics of self-direction. Adult education is often self-directed. Inescapably, successful learning throughout life — and life itself — is self-directed. But I think we have raised enough anomalies and alternative hypotheses to challenge the existing paradigm. If we ask, “What form of education is suggested by this research and argument?” rather than, “How can this research be applied to teacher-directed learning?” we will — in my opinion — have to conclude that the evidence points to a self-directed model of education. The next question is, “What does that self-directed paradigm look like?”

**THE SELF-DIRECTED LEARNING PARADIGM**

Self-directed learning is choosing a particular area in which to advance one’s knowledge, skills, accomplishments, or personal development and bringing this growth about by one’s own efforts, using any method in any circumstances at any time. As we have seen, it contrasts sharply with teacher-directed learning. In practice, many teachers already employ features of self-directed learning in their classrooms; I draw these stark distinctions to emphasize the underlying assumptions implicit in both models (see Table 1).

Table 1: Two Models of Learning

<table>
<thead>
<tr>
<th>Teacher-Directed Learning</th>
<th>Self-Directed Learning</th>
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</thead>
<tbody>
<tr>
<td>Teachers define course goals and decide how students will meet them.</td>
<td>Students meet course goals in their own way or define their own goals.</td>
</tr>
<tr>
<td>Teachers present course content in lessons.</td>
<td>Teachers teach the skills, processes, and systems necessary for independent learning.</td>
</tr>
<tr>
<td>Teachers focus on academic skills and achievement demonstrated on tests.</td>
<td>Teachers focus on experiences and studies that lead to action and productivity.</td>
</tr>
<tr>
<td>Teachers set activities, exercises, and assignments for learning.</td>
<td>Students prepare learning proposals or action contracts to negotiate with the teacher what they will learn.</td>
</tr>
<tr>
<td>Teachers motivate students to complete assignments.</td>
<td>Students motivate themselves to complete their proposals.</td>
</tr>
<tr>
<td>Teachers most often address the class and work with it as a unit.</td>
<td>Students most often work in small groups or individually.</td>
</tr>
<tr>
<td>Teachers supervise student study activities.</td>
<td>Teachers guide students through self-directed challenge activities.</td>
</tr>
<tr>
<td>Teachers test, rank, and grade students.</td>
<td>Students assess their own work, demonstrate achievement, and negotiate grades.</td>
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</tbody>
</table>

Many teachers ask, “Do you expect me to leap all the way over there [self-directed learning] from here [teacher-directed learning]?” Fortunately, teachers can construct a bridge between the two models that allows them to make the transition gradually. They do so by leading their students through a series of five stages, each involving a new set of tasks:

1. **Incidental self-direction.** The teacher introduces self-direction in assignments, stations, or special projects or through the brief use of any of the approaches to self-direction listed below.

2. **Independent thinking.** The teacher transforms the curriculum into questions for students to answer as a class, in groups, and individually or uses such participatory approaches as case studies, trials, debates, and dramatizations. This approach enables students to form their own judgments, ideas, and solutions to problems.

3. **Self-managed learning.** The teacher creates guides that tell students how to achieve course outcomes, teaches them how to regulate their work on the guides, and provides support systems to assist them.

4. **Self-planned learning.** The teacher shows students how to design their own plans for achieving course outcomes, negotiates their proposals with them, and coaches them to success.

5. **Self-directed learning.** The teacher leads students to analyze the situation, formulate their own goals, plan how to achieve them, take action, solve problems that arise, and demonstrate their achievement.

Teachers may use these five stages as a menu to sample, they may find one stage that suits them perfectly, or they may use the stages as steps...
to self-direction in their courses. A high school could adopt the stages as a sequence for moving toward self-direction grade by grade, leading to a final year that is self-directed, perhaps featuring challenging projects or, to use the Walkabout terminology, "passages" that students must complete.

THE NEW PARADIGM IN ACTION

Teachers often ask, "Where are these practices being used?" Here are three examples.

Independent thinking is the central theme of Ted Sizer's Francis W. Parker Charter Essential School in Devens, Massachusetts. A question such as "What matters?" or "What is community?" is pursued school-wide each year. Classes are integrated and inquiry-based, addressing subsets of related questions. Students are required to develop 11 essential skills. Three times during their high school years, students appear before a committee to demonstrate their achievements and readiness to advance to the next level of performance. Graduation requirements include inquiry into essential questions that students pose for themselves. These pursuits are supported by a number of excellent instruments, practices, and services.

At Thomas Haney High School in Maple Ridge, British Columbia, students master the curriculum through self-managed learning. Every course is presented in 20 learning guides that tell students the outcomes to achieve, the resources at their disposal for achieving them, and the means by which they will demonstrate that they have achieved them. Students make their own timetables; they work alone, work with others, and consult with teachers and their aides; they attend seminars, workshops, and labs; and they watch videos, work on computers, and utilize other resources to help them in their self-regulated efforts. Over 80% of graduates go on to higher education.

Jefferson County Open School near Denver, Colorado, is a self-directed learning school that features independent work at every level. A day each week is set aside for independent activities, regular educational trips, and six challenging passages-based on the Walkabout program-that students complete in their senior year. These include ambitious challenges in the fields of logical inquiry, creativity, practical applications, global awareness and service, and adventure and careers (a Walkabout). Students complete their work-often in the community, at universities, or in the field-and present their accomplishments to their peers, teachers, parents, and other adults at graduation. Students meet 30 other expectations, often with the help of regular classes. Their individual work is supported by an advisor, an advisory group, and a small peer-support group. A high percentage of graduates go on to higher education, experience success, and report satisfaction in life.

CROSSING THE BRIDGE

A number of challenges face the teacher who considers crossing the bridge between teacher-directed and self-directed learning. The first challenge is making a commitment to self-directed learning. Then the teacher must tackle the difficult step of defining a course in 20 or 30 outcomes that students are required to achieve. The next step is to choose the approach and framework that will be most effective, using as a guide the five progressive stages of self-direction described above. Next the teacher decides what skills and processes students will need and how they can be taught effectively. Finally, the classroom is organized into a rich, stimulating, and hospitable environment for learning; the instruments for self-assessment—portfolios, rubrics, demonstrations, and transcripts—are set in place; and the teacher is ready to teach students to be self-directed.

Computers and the Internet are transforming education and provide an enormous resource for self-directed work. The computer gives students instruction, research resources, connections with others, and tools for productivity. The working journal
— the student’s own book of information, ideas, plans, records, and reflections — is an essential textbook of self-direction, and the student is the author. As in Leonardo da Vinci’s journal, information and ideas lead to visions, goals, and plans, which lead to action, which leads to records of progress, which lead to reflection and renewal. The small group becomes the essential training ground for individual work and the basic element in a network of assistance and guidance for students who are directing their own learning. In advisory groups, a teacher helps six to 12 students develop and defend their individual project proposals. In support groups of three or four members, students help one another to solve problems and to complete the challenging tasks they set for themselves.

Many applications derived from research and theory have served to enhance teacher-directed learning. But when we examine the literature on the way the brain functions, metacognition, human development, group work, motivation, and success, it becomes clear that a self-directed model is far more appropriate than a teacher-directed model of education. The self-directed model can be defined, a pathway to it can be described, examples of the model in action can be found, and a process can be outlined for implementing self-directed learning in any classroom. Try on the new paradigm. As Stephen Covey says, “A paradigm is like a new pair of glasses; it affects the way you see everything in life.”

Wearing self-directed-learning glasses, you may see that paradigm shift, too. If we believe that practice should follow evidence, perhaps we should all be shifting to brain- and person-compatible self-directed education. What do you think? Let me know.