Teacher as Activator of Learning

Gayle H. Gregory

Hawker Brownlow
EDUCATION

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Introduction

Activating Student Thinking

As I entered the classroom I immediately noticed the bustle of high energy and positive chatter. I couldn't find the teacher in the midst of the focused activity that was evident. Students were not in rows but in clusters of two or three, discussing and working together. I found the teacher engaged with a small group, questioning, suggesting, and giving specific feedback so students could proceed. I eavesdropped on several groups and asked questions myself; the students were very clear about what they were trying to accomplish, some of the roadblocks they had overcome, and what they would do next. As I scanned the room, the students were generally self-directed and productive, using technology seamlessly as needed . . . tablets, computers, cell phones.

Of course all this didn't just happen. The teacher had orchestrated it with careful planning and excellent classroom management. Materials were organized, charts showed expectations related to standards, and students had rubrics with success criteria to guide their success. These students were not recipients of knowledge; they were constructing it, monitoring their progress, and taking responsibility for their learning. This teacher had successfully activated the *thinking* in this classroom. How did she do it? What were the strategies used to turn these students into active, thoughtful learners?

THE TEACHER AS ACTIVATOR

This book is about all the ways that teachers can activate student learning. But when we use the phrase "activate student learning," what do we really mean? There is no single switch for learning but skillful teachers have discovered over time what will activate their students' learning. To activate is to cause to act, not to sit passively listening and writing down notes.

The reticular activating system (RAS) in the brain is vital to the ability to attend to and ultimately filter new information and experiences. The RAS helps us engage our curiosity and interest in meaningful opportunities. Some things will inhibit the engagement and activation. One is the learning environment. Some things are already innate in the learner to help with the activation issue, primarily, the SEEKING system.

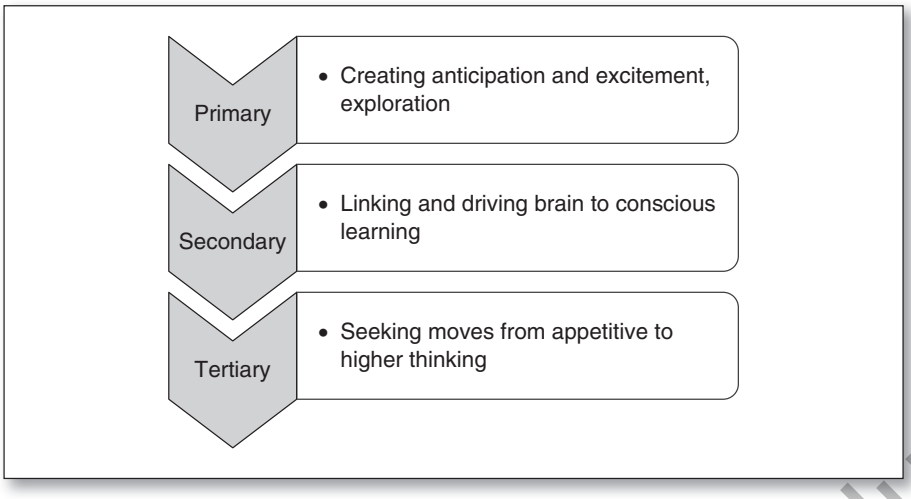
THE SEEKING SYSTEM

According to Jaak Panksepp (1998), humans have a natural SEEKING system (always printed in uppercase by Panksepp). By studying the emotions of other mammals, Panksepp determined there are seven basic, primitive emotional processing systems found in the oldest area of human brains. These are primal levels and help us understand what we currently define as motivation. Panksepp calls the most powerful of the seven systems the SEEKING / EXPECTANCY system, which includes *curiosity, interest, foraging, anticipation*, and *craving*.

This is a primal survival system in all of us. The other systems are FEAR, RAGE, LUST, CARE, GRIEF, and PLAY. Panksepp emphasizes that the SEEKING system is the granddaddy of the emotional systems and will naturally engage and activate exploration, experimentation, and thinking from the learners' innate need to know and understand (Gregory & Kaufeldt, 2015). This critical primary emotion is innate and important for humans to connect, cooperate, and collaborate. It keeps people motivated and interested in examining the world for survival and learning. It is vital for survival and is there for all teachers use as a motivational tool. Educators can activate their students' SEEKING system and allow it to flourish by providing them with opportunities to explore, examine, and play, and also by offering them strategies they enjoy plus metacognition related to learning and success. Thus it helps generate enthusiasm and release dopamine in the brain as we SEEK. The dopamine is not so much a reward as a motivator, providing a sense of eagerness to continue. The dopamine release and resulting euphoria occur during the foraging process, not at the end result. This keeps us intensely involved in the process. It is the expectancy of completion and a sense of "wanting" that creates conditions for continued attention to the task. When the exploring is complete there is a brief squirt from the opioid system (liking) that is actually less significant than the ongoing dopamine release as we SEEK. There are three basic processing levels in the SEEKING system as seen in Figure I.1.

The primary SEEKING process is "appetitive" and related to expectancy. This is the initial phase of SEEKING; as we forage and explore we

Figure I.1 The Three Levels of the SEEKING System



create curiosity, anticipation, and enthusiasm and constant dopamine release that keeps us motivated. This is unconscious and emotion-driven and is referred to as *anoetic consciousness* (or without conscious knowledge of what is occurring). There is no higher-order thinking or reflection. In young children this is spontaneous play.

When the secondary processing system kicks in, there is conscious thought process or *noetic consciousness* including awareness and knowing. It is at this point that we are aware and real learning begins. We make connections from prior knowledge or to our own reality and anticipate next steps related to the exploration phase. If we have had previous pleasure or success we are "wanting" to seek that again. This stage includes active processing or practice to become proficient and grow dendritic connections between neurons through repetition. Thus memories are made. We can foster this phase by providing an enriched environment of resources, multisensory, and interesting activities. Hebb (1949) suggests that neurons that fire together will wire together and thus form memories. Brain growth is dependent on the interaction among genes, the environment and quality experiences.

The third level of processing develops with maturity. This level of processing is evident when the learner can think beyond the present and is able to create, imagine, and synthesize information and use it in a productive way to solve problems and make plans (Panksepp & Biven, 2012). This more complex thinking is referred to as executive function, which includes ability to consciously control thinking and to self-regulate. Multiple opportunities are needed to continue to develop executive function

through asking learners to apply knowledge and higher-order thinking through the use of projects and problems (Gregory & Kaufeldt, 2015).

For the last number of years educators have talked about teachers moving from the "sage on the stage" to the "guide on the side," from lecturer to facilitator. Professor John Hattie (2009) now suggests that facilitation is not enough. He recommends that we distinguish between the roles of *facilitator* and *activator*. Facilitation is only the guide on the side, but activation means being integrally involved with students as a partner in learning. This also implies a new learning relationship between and among teachers and students. Not an I/You but a We.

How does facilitation contrast with activation in practice in the day-to-day classroom? Hattie gives some examples. In classrooms where the teacher acts as a facilitator, you might find gaming and simulations, inquiry-based activities, smaller class sizes, problem-based learning, individualized instruction, and web-based and inductive teaching. In classrooms where the teacher acts as an activator, you might find reciprocal teaching, teacher-student self-verbalization, metacognitive strategies, appropriate level of challenging tasks, and checks for understanding, feedback, and effectiveness. Figure I.2 shows these strategies in greater detail. The impact of teacher as activator has an effect size of 0.60 and that of teacher as a facilitator is only 0.17.

This book gives teachers a chance to learn about the high-impact strategies that are most effective according to Hattie and others, and it also offers practical ways to put these strategies into our daily work in classrooms and schools. Although research is helpful and promising, we need to operationalize the research so that teachers can use it in the classroom. Educational neuroscience has and will continue to inform our practice and cause us to question past methods and engage in new

Figure I.2 Teacher Facilitator and Activator Strategies

Facilitator	Activator
• Providing games and simulations • Problems and projects • Attention to gender issues • Online learning • Whole language programs • Inductive and inquiry methods	• Peer interaction and teaching • Quality feedback • Fostering self-reflection and metacognition • Using direct instruction • Attention to mastery • Appropriate level of challenge • Thoughtful assessment and evaluation methods

Source: Hattie (2009).

ones to better serve our diverse students. Brains have some similarities but also some unique characteristics. All this should take place, of course, in a climate of safety and invitation where errors are accepted as a part of the learning process. The environment should also be welcoming and nurturing.

Making a shift from facilitation to activation doesn't require hefty funding or output, the way new textbooks or computers would. It just requires a mind shift about what we believe schools should be like—changing our vision from a factory model to a thinking model. Here are some of the factors in education that need to be changed for students to be activated and reach their potential.

CHANGING SCHOOLS

Many schools have not changed much in the last century. In a lot of classrooms the teaching mode is still "sit and get." It becomes even more that way as we move up the grades with the guise of getting the student ready to handle college or university (even though many may have no intention of attending university and enduring long lectures). Teachers continue to rely on "talk and chalk" (or perhaps "talk and overhead" or PowerPoint) methods, and we expect students to endure it. Some teachers even suggest that if it was good enough for them when they were in school, it's good enough for their current students.

Teachers always find that there is a group of compliant learners in a class who learn in spite of us. They will do whatever it takes to graduate at a high level. They are somewhat self-sufficient, self-starters who follow routines and expectations and succeed whether learning is engaging or interesting.

But times are changing, and we now want more than a measly quarter of students—those on the high end of the bell curve who are highly internally motivated—to be successful. From No Child Left Behind to Race to the Top, expectations are that *all* students can and should do well. We should no longer blame failure on the students' lack of commitment and perseverance. If students are not committed, it's often because they are confronted with a boring and unchallenging curriculum filled with "drill and kill" assignments and preparations for test taking. Surveys of thousands of teachers from all grade levels as to the level of enthusiasm in their students garnered interesting information. About 95% reported teacher satisfaction with their students' enthusiasm at the kindergarten level, but that satisfaction plummets to 37% by ninth grade. Research sponsored by the MetLife Foundation (2012) showed a downward trend in