

# Cultivating Student **Reflection**

**Developed by Teachers  
at the Cambridgeport School**

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*At the Cambridgeport School, we have spent almost fifteen years developing our teaching practice to include the ideas of reflective learning for adults and students from the youngest kindergarten students to our graduating eighth graders.*

## From the Desk of Lynn Stuart

October 1, 2003

Dear Reader,

Reflection is at the heart of learning. The themes and stories of this book present a way to look at teaching and learning through the multifaceted lens of reflection. At the Cambridgeport School, we have spent almost fifteen years developing our teaching practice to include the ideas of reflective learning for adults and students from the youngest kindergarten students to our graduating eighth graders. In a world saturated with information and great attention to ever increasing speed, reflection helps us slow down and recognize the depth and breadth of learning. It allows us to get in touch with ourselves as we make learning relevant and meaningful.

Teaching reflectively is a challenge, for such teaching seeks a sense of purpose, connectedness, and understanding. We have accepted this challenge with full knowledge that the road to reflective learning is one that requires patience and willingness to be open to failure as well as success. This road has not been easy for us. Reflection invites honesty and willingness to consider how we can do things differently and better. Reflection invites perseverance as the early stumbles of first learning turn into more and more accomplished ways of understanding and doing. In the final analysis, reflection is also a path to affirmation and joy.

We invite you to join us in thinking about how reflection might prosper as a belief about learning and as a framework for analyzing work that both students and teachers do. We feel certain that the work of reflection will open doors to higher levels of understanding and skill. Good luck!

A handwritten signature in black ink that reads "Lynn Stuart". The signature is written in a cursive, flowing style.

Lynn Stuart

*Principal, Cambridgeport School*

## Introduction: Why Reflective Learning Matters

### What is Reflective Learning?

We all experience various levels and depths of thinking as we go through our days. When riding a bicycle through a busy intersection, we are operating on some level of meta-cognition that allows us to decide what information is most relevant to our immediate situation. Our mind tells us how to take our skill—bike riding—and apply it to focusing on on-coming traffic rather than enjoying the scenery or elevating our heart rate—both goals we might well be concerned with when

**Reflection strengthens a student’s ability to organize new knowledge with greater meaning and success.**

biking in other contexts. *Reflection* helps us decide how to monitor and control our thought processes to increase the likelihood of reaching our intended goal.

The same holds true for children with their learning. Reflection strengthens a student’s ability to organize new knowledge with greater meaning and success. A growing body of research supports this conclusion. Kluwe writes, “to enhance learning to the fullest, learners need to become aware of themselves as self-regulatory organisms who can consciously and deliberately achieve specific goals.”<sup>1</sup> Reflection, meta-cognition, or in a greater sense, intrapersonal intelligence, helps develop this ability to *think about your thinking*. Despite its apparent “fuzzy” nature,

the process of reflection makes us better learners.

### Reflective Thinking Fosters Understanding

Understanding has always been celebrated as the deepest form of thinking. According to David Perkins, co-director of Project Zero at Harvard University,

*When a person knows something the statement usually means he or she has mentally stored information and can readily retrieve it. By contrast when a student understands something, it is assumed her skills surpass the stored information... [she] can explain concepts in [her] own words, use information appropriately in new contexts, make fresh analogies, and generalizations.<sup>2</sup>*

From Lao-Tzu to Gardner, Coltrane to Picasso, scientists, philosophers, and artists have always strived for the deepest understanding of their craft. When hearing a song, anyone can listen and enjoy its tune, words, and sound, but to the ears of a trained musician, an increased *understanding* of concepts such as melodic development, lyrical structure, and choice of instrumentation break open wider avenues of appreciation.

Yet *teaching for understanding* is far more complicated than exposing children to factual knowledge. Research indicates that “understanding cannot be transmitted; the connections have to be made by the learner.”<sup>3</sup> A child’s learning is a highly personal event. Thus, the great challenge for educators today is to design curriculum that allows students to make deep personal sense of their knowledge and experience.

Reflective thinking is the mind's strongest glue to make these connections. Studies show that people who use meta-cognitive processes are able to retain and recall information more effectively and utilize more flexible problem-solving strategies.<sup>4</sup> Whether it be a mournful tune tugging at a broken heart, compelling lyrics inspiring a memory, or an appreciation of the music's novelty and tonal complexity, reflection allows opportunities for students to create their own unique connection to the song. Reflection personalizes learning for students, providing the key for their potential enlightenment.

### **Reflection Demands Authentic Assessment**

Many standardized tests require children to utilize recall level knowledge, and offer little insight into how students use information or construct understanding in the classroom. If the goal of teaching is to foster understanding, how can one establish any sense of a learner with only superficial tools? In order to establish a framework for meaning and curriculum, educators have to incorporate more qualitative methods that are natural, descriptive, process-oriented, inductive, and meaning-driven.<sup>5</sup>

Interviews and observational records are two insightful ways to unlock the process and progress of a child's learning. Another instrument of reflective assessment is a portfolio of student work. Made up of assignments and projects, it is a collection of authentic artifacts offering a first-hand glimpse into a student's accomplishments and potential. The portfolio is a multi-dimensional collection of work that can be used as evidence to assess mastery over subject matter, ascertain areas for further development, and understand



Frederick conferences with a student.

individual assignments within the grand spectrum of the child's education. Within its contents lie concrete evidence of the level of discourse and instruction between student and teacher. Portfolios also provide opportunities for multiple types of evaluations that allow other teachers, students, and families to participate in the learning process. In turn, analysis of these artifacts allows the entire school community to fine-tune its pedagogical thinking. Because reflective practice emphasizes qualitative strategies, its assessments produce a more global portrait of the learner. Reflective practice treats the student as a tangible person, not an abstract number or grade, and encourages participation of all those who nurture that child.

### **Reflection is Valued by the Latest Movements in School Reform**

The old paradigm for education typically portrayed the teacher as an erudite specialist who imparts information unto passive minds.

### WHY REFLECTIVE LEARNING MATTERS

Much has changed due to the work of pedagogical thinker John Dewey in the 1930's, and the integrated and holistic educational movements during the 1970's. As a result, there have been several movements within education to create child-centered classrooms filled with reflective students and teachers. Despite current educational trends toward high stakes testing and teacher accountability, the latest educational research and expert opinions continue to place a high value on the need for reflective teaching and learning.

After many years of examining “what works” in successful schools, researchers Steven Zemelman, Harvey Daniels, and Arthur Hyde compiled a list of recommendations common to many prominent education associations, including the National Council of

**Giving children the chance to pursue authentic interests and develop self-regulating skills makes them more cogent, confident, and critical thinkers**

Teachers of Mathematics, the Center for the Study of Reading, the National Writing Project, the National Council for the Social Studies, the American Association for the Advancement of Science, the National Council of Teachers of English, the National Association for the Education of Young Children, and the International Reading Association. Zemelman *et al.* note that, despite their differences, these disparate organizations have achieved an “unrecognized consensus” that clearly illustrates and supports reflective classroom practice.

Among these recommendations are:

- ◆ MORE active learning... doing, talking, and collaborating
- ◆ MORE emphasis on higher-order thinking
- ◆ MORE responsibility transferred to students: goal setting, record keeping, monitoring, sharing, exhibiting and evaluating
- ◆ MORE choice for students
- ◆ MORE descriptive evaluations of student growth, including observational/anecdotal records, conference notes and performance assessment rubrics<sup>6</sup>

In addition, the National Board for Professional Teaching Standards, “an organization whose mission is to establish high and rigorous standards for what accomplished teachers should know and be able to do,” identifies reflection as an essential habit of mind. In the certification process, extensive reflective essays are required for every portfolio, in every area, for every certification. Reflective practice is not an option for teaching excellence; it's a requirement.

**Reflection creates self-directed learners and empowers children**

When kids are invested in what they do, they inquire, innovate, and construct. They “are more apt to pay attention, volunteer answers, ask for guidance, persist, and complete tasks beyond what is merely acceptable.”<sup>7</sup> Giving children the chance to pursue authentic interests and develop self-regulating skills makes them more cogent, confident, and critical thinkers. They will be able to form authentic opinions which allow for greater personal expression and meaningful decision-

making.<sup>8</sup> In addition, when children understand the need for compromise, cooperation, and self-control, a supportive classroom community emerges.<sup>9</sup>

In an age when information is changing constantly and instantaneously, students need greater flexibility in creating ideas and challenging assumptions. Reflection encourages children to be self-reliant and, as a result, less dependent upon their teachers, and more empowered to create direct and lasting change in their lives.

All teachers want their students to succeed. In any curriculum area, literacy for example, we don't ask children to simply listen to stories. We expect them to read the words themselves, write their own narratives, poems and essays, and even critique each other's work. Should we expect anything less with our ability to think? Reflective teaching allows the students to embrace the products of learning, but more importantly the principles as well. Instead of just becoming thoughtless consumers, our children can become informed critics of what they are digesting. They are not just hearing the notes, but understanding the music as well.

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## Overview: Reflective Thinking at Cambridgeport School

Cambridge, Massachusetts, home to both Harvard University and the Massachusetts Institute of Technology, is a place where original ideas thrive. In addition to professors and students, an astonishing number of artists, activists, scientists, and writers call Cambridge home. Yet mixed in with the stately college architecture and gleaming new technology complexes, looming factories testify to the city's industrial past, and present: it is a city full of ethnic, cultural, and socioeconomic diversity.

In the heart of the city, the Cambridgeport School occupies a 100-year-old building on a shady side street. Though the school is not located near either of Cambridge's big university campuses, a visitor may well do a double take when peering into these classrooms. From the level of student independence to the caliber of thought, this public K-8 school

feels different: in fact, it almost feels like an institution of higher learning.

In the combined 1<sup>st</sup> and 2<sup>nd</sup> grade classroom, three students are working independently at a visual arts station, drawing with charcoal and conversing quietly with each other. In the 3<sup>rd</sup> and 4<sup>th</sup> grade room, a group of six students discuss a reading, seminar-style: one student asks his peers a question, and they flip to the relevant section in the book to re-read the passage before offering an answer. A 5<sup>th</sup> and 6<sup>th</sup> grade teacher is reviewing a math lesson with the whole class when one student volunteers, "I have a different strategy for that problem that might be more efficient. Can I show everyone else?" In the 7<sup>th</sup> grade Humanities room, two students critique each other's writing: "I'm not convinced by this paragraph. Can you cite more evidence?" A teacher smiles warmly at the visitor as she ducks into her colleague's classroom for a moment: "What was that Dalai Lama quote you mentioned to me the other day? My morning meeting was crazy, I need a little perspective!"

Such interactions make it immediately apparent to any visitor that Cambridgeport is a school that values thinking. One teacher explains:

*As a school, we are committed to giving all students the opportunity too often reserved for only some. In many cases, it's been expected that only certain students—those at the top of their class, those from educated families—would have the opportunity to make their own academic choices and to reflect on them. We want to give all our students the freedom to learn how to learn on their own.*

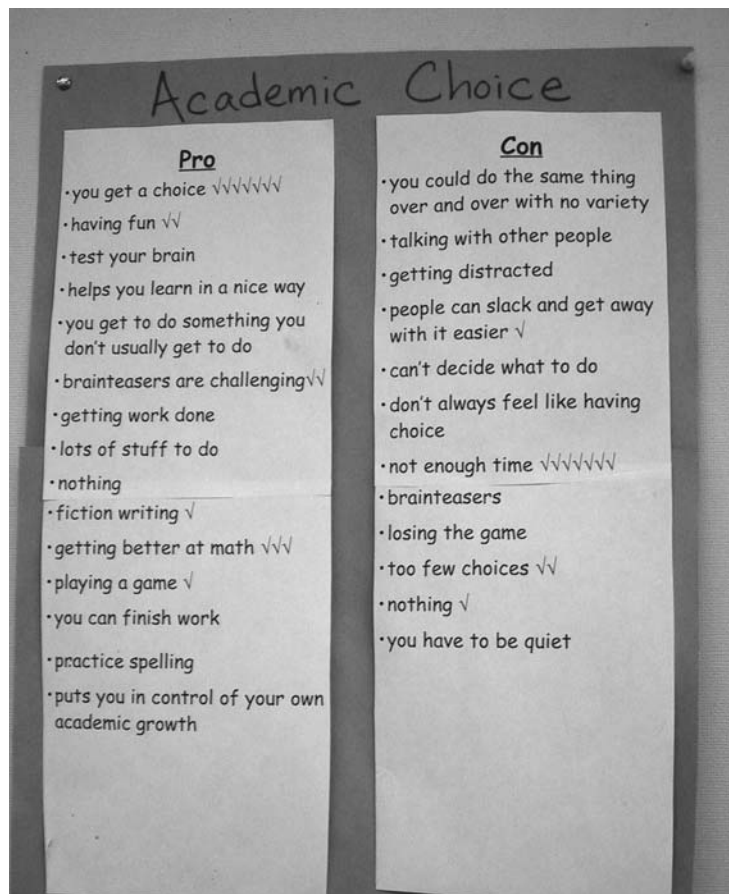


Cambridgeport school

Drawing on principles of project-based learning and academic choice, the Cambridgeport School was founded in 1990, in a single Kindergarten classroom housed in a temporary location. Since then, this experiment has grown into a full-fledged public school, with seventeen classrooms, serving 331 students from Kindergarten through eighth grade. Now one of the most highly subscribed public schools in Cambridge, Cambridgeport has a waiting list of over one hundred families. Through collaborations with organizations such as Harvard University's Project Zero and the National Board for Professional Teaching Standards, Cambridgeport teacher-researchers have documented and published numerous studies, earning national recognition for their work with student portfolios and other ways of making learning visible.

Perhaps most impressively of all, teachers and staff at Cambridgeport have remained true to their founding principles while rising to the challenge of standards-based reform. Rather than abandon its project-based focus in the face of an increased emphasis on state-mandated standards, the school has found ways to embrace—and achieve—both goals. Students at Cambridgeport consistently score well above state and district averages on the high-stakes Massachusetts Comprehensive Assessment System (MCAS) exams, and become creative, critical thinkers and problem solvers while they're at it. Cambridgeport students are students who understand the power of their own ideas, and who have the confidence and resourcefulness to take those ideas as far as they can go.

Of course, the Cambridgeport School isn't perfect—they face the same, exhausting pressures and challenges as any other public school. The faculty and staff struggle con-



Academic Choice (top)  
A kindergarten student shares her portfolio with a guest on Portfolio day. (bottom)

stantly to remain true to their commitment to independent thought, continual improvement, and personal and professional growth. It's a tall, at times near-impossible, order. Yet, just as they teach their students, Cambridgeport teachers believe that the *process* of growing and learning is as important as the final outcome.

### Reflective Thinking: The Book

In the fall of 2002, the Project for School Innovation (PSI) conducted surveys and interviews of Cambridgeport faculty and staff to try to understand the secret of this success. One idea, in fact one word, came up time and time again: *reflection*. Staff and students at Cambridgeport School are continually reflecting on their own thinking and evaluating their own learning process. Teachers described the school culture this way:

*Students are able to reflect and think critically because they've been practicing since Kindergarten. You can see it in their writing. You can see it in their projects. You can see it in the way they talk about science, and math, and history. They're not just saying, 'this is true*

*because someone else said it.' They're actually becoming thinkers, and I think that's one thing that this school is wonderful at.*

*We're getting kids to really think about what their strengths are as students and what are things that they need to work on. Not every student is able to articulate that at first, but by guiding them through reflection, we can see growth in that as well...all the kids, once they get some practice and some opportunity, are able to see learning and talk about it.*

*[Cambridgeport] teachers are always reflecting. Everyone is constantly thinking about how to be better at his or her teaching. Because of that, there's so much help and so much empathy. It's a very positive professional environment.*

During the 2002-2003 school year, five members of the Cambridgeport faculty engaged in action research to explore the specific practices and systems at their school designed to push both students and staff to reach their potential as reflective thinkers.

This book offers some of the lessons that came out of that process. It was developed by teachers at Cambridgeport to be used in almost any school, by any teacher who wishes to help students become more reflective learners. It is divided into four sections: *Reflective Instruction* explores specific strategies teachers can use to help students think critically; *Reflective Assessment* explores systems that help students use assessment data to inform their own learning; *Portfolio Reflection* examines how student portfolios



A student writes a reflection.

drive students to think more deeply about their learning process; *Being a Reflective Practitioner* outlines ways for adults to reflect, individually and collaboratively, in order to improve their teaching.

## Positive Impact of Reflective Learning

What happens when students and adults are reflective thinkers? The action research team at Cambridgeport identified a total of five goals for how they expect reflection to affect students' skills and beliefs, as well as teachers' skills and confidence. You will notice these goals as a thread running throughout this book.

### STUDENT SKILLS AND BELIEFS

#### 1. Students manage their own learning

Reflective learners are self-aware and self-critical. They can evaluate their own learning strengths, challenges, and strategies. They choose activities based upon what they need to work on. They can articulate what they want to learn and why, using information about their own thinking and learning to make decisions and self-assess. Students can give and receive honest, constructive feedback from peers and adults. They see themselves as learners, and see peers and adults as learners as well.

#### 2. Students work thoughtfully and carefully

Reflective learners make connections between their previous experience, their current learning, and their emotional lives. They have clear goals and they understand that reaching these goals is a gradual, deliberate process. When reflective students make mistakes, they seek to understand *why* and self-correct.

#### 3. Students are confident learners

Reflective learners take responsibility for setting and achieving their own goals. They can see what they have learned and objectively evaluate their own progress. They recognize their own strengths and weaknesses, and can think creatively about new ways to overcome learning obstacles. They have a strong sense of mastery over previous skills and material, which gives them the confidence to perform better as they develop.

#### 4. Students express emotions constructively

Reflective learners notice how their feelings affect their behavior and their work. They understand the choices they make and the role they must play in controlling their emotions. They can recognize and articulate when they are frustrated or confused in their learning, and develop strategies to work through their emotions. They also recognize that learning is dependent on, and facilitated by, working with others. By sharing ideas, they better understand their own assumptions and can create stronger convictions.

### TEACHER SKILLS AND CONFIDENCE

#### 5. Teachers model reflection for students

Reflective teachers see themselves as learners, too; they are constantly assessing their own practice in order to improve. They reflect individually and seek specific, constructive input from colleagues. They recognize their own frustrations and difficulties, but they move beyond negative thoughts to make clear plans for improvement. They ask questions, admit their mistakes, and strive to model reflective learning for their students and colleagues.