

Incorporating Soft Skills into the K-12 Curriculum

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In the following report, Hanover Research reviews best practices for incorporating an array of soft skills in K-12 programming, as such skills will be increasingly important for success in both postsecondary education and employment.

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EXECUTIVE SUMMARY AND KEY FINDINGS

INTRODUCTION

One of the main purposes of K-12 education in the United States is to prepare students with the skills necessary for success after graduation from secondary education. In addition to basic competencies in reading and mathematics, success in postsecondary education and employment increasingly requires so-called “soft skills.”¹ In order to understand how K-12 institutions can best help students to develop these skills, this report presents best practice literature for developing soft skills through the general curriculum.

The report includes the following sections:

- **Section I** discusses the skills that are most important for postsecondary education and employment, in addition to considering trends and limitations;
- **Sections II-V** define these skills and review best practices in the incorporation of skills instruction in these areas into the K-12 curriculum.

The Conclusion summarizes the findings of the report with respect to the various skills areas and strategies for instruction. An Appendix provides detailed, concrete strategies for incorporating skills instruction into the curriculum and the classroom.

KEY FINDINGS

- **Communication skills, especially active listening, are of paramount importance for postsecondary success.** Educators can structure instructional time to ensure that students spend significant time working on active and effective communication. This can involve essays, reading comprehension exercises, group discussion, and presentations in various subject areas. Multiple skills may also be incorporated simultaneously, such as evaluating the class on active listening during presentations by other students.
- **Critical thinking, problem solving, and decision making are also important for postsecondary success.** Most curricula for teaching these skills in a school setting rely on two components. The first component is instruction based on worked examples and practice. Guidance and supervision should gradually lessen as students learn, either individually or in groups, to tackle problems by simplifying and solving complex situations. The second component consists of assessments designed to evaluate the level of thinking and analysis that students are applying. Rubrics and testing styles vary extensively, but they all focus on testing students, individually or in a group, through an example problem or case situation.

¹ Johnson, B. “College and Career Ready: Soft Skills are Crucial.” Edutopia. July 3, 2013. <http://www.edutopia.org/blog/college-career-ready-soft-skills-crucial-ben-johnson>

- **Postsecondary success also requires skills for working in teams, as well as being able to produce high-quality work individually.** In order to develop these skills, literature recommends modeling social intelligence behavior and self-regulation, as well as creating role-playing and cooperative environments. Putting students together to work in groups is insufficient, for students must also have personal and group accountability for results, as well as the social skills for working together. Modeling and practicing social perceptiveness is also important for developing an understanding of how others think and view the world.
- **Time management is an essential skill for both postsecondary education and the workplace.** Literature recommends modeling time management and guiding students through structuring their time. Setting intermediate deadlines can help students build the mindset of breaking long processes into individual components, which helps prevent time mismanagement.
- **There are clear ways to incorporate these skills into the curriculum across disciplines.** The main methods involve modeling behavior, working examples, and reinforcing skills through practice.

SECTION I: SKILLS FOR POSTSECONDARY SUCCESS

SKILLS FOR POSTSECONDARY SUCCESS

To more clearly define the soft skills important for postsecondary success, Hanover Research selected a number of high-growth occupations, as identified by the Bureau of Labor Statistics, and then determined the skills required in such occupations, as defined by the O*NET database, which provides detailed information on the skills, knowledge, and education required for various occupations. For any given occupation, the database ranks individual skills in importance from zero to 100, which makes it possible to find the average importance rating for a given skill across a set of given occupations.² Hanover compiled the skill importance ratings for a number of high-growth occupations and averaged the ratings across this set of jobs. Ranked in order of average importance, the most important soft skills were:

- Active Listening,
- Speaking,
- Critical Thinking,
- Reading Comprehension,
- Monitoring,
- Coordination,
- Time Management,
- Social Perceptiveness,
- Judgment and Decision Making,
- Service Orientation,
- Complex Problem Solving,
- Writing, and
- Active Learning

In the postsecondary education context, skills such as these are also very important. Colleges and universities require competencies in communication, critical thinking, and time management.³ Indeed, many organizations highlight the similarities in the skills required for

² E.g., “Details Report for 31-1011.00 – Home Health Aide – Skills.” O*NET.
<http://www.onetonline.org/link/details/31-1011.00#Skills>

³ [1] “Undergraduate Study at UW-Madison.” University of Wisconsin-Madison.
http://pubs.wisc.edu/ug/geninfo_study_ger.htm

[2] “Essential Skills for College Students.” Clarke University. <http://www.clarke.edu/page.aspx?id=22553>

[3] Conley, D. “A Complete Definition of College and Career Readiness.” Educational Policy Improvement Center.
<https://www.epiconline.org/publications/documents/College%20and%20Career%20Readiness%20Definition.pdf>

[4] “Speaking and Listening Competencies for College Students.” National Communication Association.
http://www.in.gov/che/files/NCA-Speaking_and_Listening_Competencies_for_College_Students.pdf

college and career readiness, with postsecondary education designed to further develop these skills.

This report highlights overlaps and complementarity among various skills, so the following sections reorganize the skills based on conceptual categories. Thus, Section III analyzes critical thinking, complex problem solving, and decision making, noting that they share conceptual features as higher-order thinking skills, and Section IV discusses monitoring, coordination, and social perceptiveness, acknowledging how each relates to the skills required for working individually and in a team setting. Active listening and time management do not share a sufficient array of characteristics with other skills to warrant the formation of groups around these skills, and accordingly are discussed individually.

COMMUNICATION SKILLS

This report will not address reading comprehension, writing, and speaking since they fall under the English Language Arts (ELA) curriculum. However, **it is recommended that schools strengthen reading comprehension, writing, and speaking through the ELA curriculum and through relevant exercises in all pertinent subject areas.** Each of these skills speaks to a need for strong communication skills, which schools can foster across different subjects through the rigorous use of activities and assignments requiring reading, writing, speaking, presenting, and listening skills. Essay work in a science class can help build writing skills, and presentations in a history course can help develop speaking skills. Interactive assignments that require communication beyond listening alone are important, and teacher feedback during these tasks is vital for building the skills.

LIMITATIONS

While this report seeks to identify best practices for incorporating the teaching of all of these skills into the curriculum, there are some limitations in the research available. Most research considers service orientation to be primarily driven by the personality traits a person holds from birth. Accordingly, research finds that the innate differences among individuals are far more important than training in this area. Exposing students to community service and other examples of service might be a way to develop a service orientation, but there are no studies to validate this. Some school districts do offer a customer service course or include customer service training in career and technical education courses.⁴

In the academic literature, active learning refers to an active learning setting that engages students with the classroom activities. This is different from the O*NET definition, which defines active learning as “[u]nderstanding the implications of new information for both current and future problem-solving and decision-making.”⁵ This definition overlaps with

⁴ [1] Cantrell, K. “Customer Service.” Hartshorne Public Schools.

http://www.hartshorne.k12.ok.us/page/89691_4&month=1&year=2013&callID=148737&list_view=1&

[2] Carr, R. “Business and Information Technology Education Handbook 2011-2012.” Atoka High School. reginacarr.wikispaces.com/file/view/BITE+Handbook.docx

⁵ “Skills – Basic Skills.” O*NET OnLine. <http://www.onetonline.org/find/descriptor/browse/Skills/2.A/>

problem solving and decision making, which are both considered more important for these occupations and which are discussed in this report in detail. As a result, the report does not review active learning by itself.

TRENDS IN INCORPORATING SOFT SKILLS INSTRUCTION INTO THE CURRICULUM

For each of these skills and skill areas, **research repeatedly suggests incorporating skills instruction through curricula and teaching styles that rely heavily on examples, modeling, and practice.** While there is often little agreement among academics with regard to the details of skill instruction, there is often broad agreement with respect to the general principles and critical features. For each skill area, researchers have established overlapping lists of core principles upon which to develop these skills. Furthermore, these principles often resemble the principles for teaching other soft skills. There is also often substantial overlap in the means by which educators may embed skills instruction into the curriculum. For example, there are multiple sources discussing best practices for integrating problem-solving and teamwork skills jointly into a curriculum.⁶ **Given the multidisciplinary nature of these skills, there are many opportunities to integrate multiple skills simultaneously, and they may help reinforce one another.**

There is a variety of books and materials for teaching emotional intelligence, communication, and cooperation.⁷ The effectiveness and validity of these materials are not confirmed by research, but they typically rely on best practices identified in literature.

⁶ [1] Hmelo-Silver, C. "Problem-Based Learning: What and How Do Students Learn?" *Educational Psychology Review*, 16:3, 2004. pp. 235-266. http://kanagawa.lti.cs.cmu.edu/olcts09/sites/default/files/Hmelo-Silver_2004.pdf

[2] Goltz, S., et al. "Teaching Teamwork and Problem Solving Concurrently." *Journal of Management Education*, 32:5, 2008. pp. 541-562. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.114.7756&rep=rep1&type=pdf>

⁷ E.g. [1] "Employability and Soft Skills Manual." Pennsylvania Academic and Career/Technical Training Alliance. <http://www.pacttalliance.us/resources/employability/>

[2] Killick, S. *Emotional Literacy at the Heart of the School Ethos*, Sage Publications, 2006. <http://www.uk.sagepub.com/booksProdDesc.nav?prodId=Book228039>

SECTION II: ACTIVE LISTENING

This section reviews definitions of active listening and best practices for incorporating active listening into the K-12 curriculum.

DEFINING ACTIVE LISTENING

Active listening represents the receiving component of good communication. O*NET defines active listening as “[g]iving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.”⁸ As one researcher puts it, active listening “is the active construction of meaning from all the signals – verbal and nonverbal – a speaker is sending.”⁹

TEACHING ACTIVE LISTENING

To foster active listening, teachers should model good listening habits, set developmentally appropriate expectations, manage the classroom well, and communicate effectively. Mary Jalongo notes that developing attentive, involved listening in students depends, to a great extent, upon teacher behavior.¹⁰ Based on her research and the research of others, she presents seven basic classroom principles for promoting active listening. In order for teachers to be role models of active listening, they need to believe that:

- Teaching and learning can occur without teacher talk,
- The emphasis should be on learning how to think rather than on collecting information,
- Most good questions should encourage deeper thinking and have more than one answer,
- Children should play a major role in formulating questions and the teacher should probe deeper whenever an intriguing idea is raised,
- Children need to relate subject matter to their own lives,
- Children should spend as much time listening to one another as to the teacher, and
- Problems and conflicts often can be resolved by listening and talking together.¹¹

Concrete examples include teachers always expressing attentiveness to students, maintaining appropriately-sized groups for discussion, managing classroom transitions, and

⁸ “Skills – Basic Skills,” Op. cit.

⁹ Hennings, D., quoted in: Jalongo, M. “Promoting Active Listening in the Classroom.” *Childhood Education*, 72:1, 1995. p. 13.

¹⁰ *Ibid.*, p. 14.

¹¹ Bulleted points taken verbatim from *ibid.*, p. 15.

establishing inviting and comfortable routines.¹² By demonstrating an interest in what students are saying, teachers model active listening for students and encourage students to do the same. Maintaining groups with the appropriate size, especially for different age groups, is critical to fostering active listening. A teacher can encourage students to listen to each other by keeping group sizes small and structuring the time for questions and responses. Often, students will have the most difficulty being active listeners during transition times, so it is important to establish routines and activities to refocus attention.¹³

Jalongo provides 11 specific suggestions for building children’s listening skills throughout the school day, each drawing from academic research. This report presents them in the Appendix.

Drawing from their commercial offerings, Randy Bancino and Claire Zevalkink propose six steps for helping students learn active listening skills, targeting an older set of students than the Jalongo research. Figure 2.1 presents the steps and the actions related to each step.

Figure 2.1: Steps to Learning Active Listening Skills

| | |
|--|---|
| 1 - CREATE A SAFE PLACE | 2 - BECOME ACTIVELY INVOLVED |
| <ul style="list-style-type: none"> ■ Draw the other person out. ■ Use door openers: “Could you explain?” or “Tell me more.” ■ Be acknowledging: “I see,” “yes,” or “go on.” | <ul style="list-style-type: none"> ■ Focus your complete attention on the speaker. ■ Make eye contact. ■ Smile genuinely. ■ Maintain an open, relaxed posture. ■ Sit or stand squarely. ■ Lean forward. ■ Avoid physical barriers. ■ Tune out distractions. |
| 3 - AVOID THE TEMPTATION TO EVALUATE | 4 - SEARCH FOR MEANING |
| <ul style="list-style-type: none"> ■ Don't judge. ■ Don't criticize. | <ul style="list-style-type: none"> ■ Decode the message. ■ Perceive the speaker's feelings. ■ Discover the real messages. |
| 5 - CONFIRM YOUR UNDERSTANDING | 6 - BRING CLOSURE |
| <ul style="list-style-type: none"> ■ Acknowledge. ■ Restate. ■ Paraphrase. | <ul style="list-style-type: none"> ■ Summarize. ■ State your position (if appropriate). ■ Agree on actions to be taken (as necessary). |

Source: Bancino and Zevalkink¹⁴

¹² Ibid., pp. 14-17.

¹³ Bulleted points taken verbatim from *ibid.*, p. 15.

¹⁴ Bancino, R., and C. Zevalkink. “Soft Skills: the New Curriculum for Hard-Core Technical Professionals.” *Techniques*, 82:5, 2007. <http://www.pinnacleapps.com/library/wp-content/uploads/2012/07/Soft-skills-The-New-Curriculum.pdf>

SECTION III: CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING

This section discusses the related concepts of critical thinking, problem solving, and decision making. These concepts are closely related to the idea of higher-order thinking.

DEFINING CRITICAL THINKING

There are several different definitions for critical thinking, but each involves critically evaluating the validity and relevance of information. One researcher notes that “[m]ost formal definitions characterize critical thinking as the intentional application of rational, higher order thinking skills, such as analysis, synthesis, problem recognition and problem solving, inference, and evaluation.”¹⁵ Another academic provides a simpler definition, noting that critical thinking “means making reasoned judgments” regarding any variety of subject, from academic arguments to new stories.¹⁶ Beyer notes six essential aspects of critical thinking:

- **Dispositions:** Critical thinkers are skeptical, open-minded, value fair-mindedness, respect evidence and reasoning, respect clarity and precision, look at different points of view, and will change positions when reason leads them to do so.
- **Criteria:** Thinking critically entails the use of criteria, or conditions that must be met for something to be judged as believable. Although the argument can be made that each subject area has different criteria, some standards apply to all subjects: “... an assertion must ... be based on relevant, accurate facts; based on credible sources; precise; unbiased; free from logical fallacies; logically consistent; and strongly reasoned.”
- **Argument:** An argument is a statement or proposition with supporting evidence. Critical thinking involves identifying, evaluating, and constructing arguments.
- **Reasoning:** Reasoning is the ability to infer a conclusion from one or multiple premises. To do so requires examining logical relationships among statements or data.
- **Point of View:** A point of view shapes one's construction of meaning. In a search for understanding, critical thinkers view phenomena from many different points of view.
- **Procedures for Applying Criteria:** Other types of thinking use a general procedure. Critical thinking makes use of many procedures. These procedures include asking questions, making judgments, and identifying assumptions.¹⁷

¹⁵ Angelo, T., quoted in Adsit, K. “Teaching Critical Thinking Skills.” University of Dayton Grayson H. Walker Teaching Resource Center. <http://academic.udayton.edu/legaled/ctskills/ctskills01.htm>

¹⁶ Beyer, B., quoted in Adsit, Op. cit.

¹⁷ Bulleted points adapted from Adsit, Op. cit.

Leicester recounts four kinds of thought patterns that are central to critical thinking, including recognizing and challenging assumptions, taking account of context, imagining alternatives, and developing reflective skepticism.¹⁸ Advancing on Brookfield's concepts, Leicester notes that critical thinking "enables us to have a better understanding of ideas, data, arguments and situations."¹⁹

TEACHING CRITICAL THINKING

Research suggests that there are **"numerous, qualitatively different types of evidence showing that students can become better thinkers as a result of appropriate instruction."**²⁰ However, it is difficult to integrate critical thinking within specific subjects and courses, since it is designed for application across subjects. Halpern proposes a four-part model for critical thinking instruction. The four components are:

- A dispositional or attitudinal component,
- Instruction in and practice with critical thinking skills,
- Structure-training activities designed to facilitate transfer across contexts, and
- A metacognitive component used to direct and assess thinking.²¹

In detail, this means that students must be prepared for the extensive cognitive effort involved in the development of critical thinking. Furthermore, educators should develop instruction to build specific critical thinking skills, including verbal reasoning, argument analysis, hypothesis formation and testing, probability and uncertainty, and decision making and problem solving. Focusing on the ability to transfer these skills to other contexts, educators should expose students to the same critical thinking analyses in a variety of contexts.

Adsit presents several teaching strategies designed to help promote critical thinking. These include classroom assessment techniques (CATS), cooperative learning strategies, the case study/discussion method, using questions, conference-style learning, using writing assessments, dialogues, and ambiguity. Each of these strategies is designed to force students to think about the situation they are presented and to discuss the various components of the situation. Many of these techniques have students discuss with one another and work together to think through problems.²² The Appendix of this report includes a more detailed presentation of these strategies.

In discussing the CATS activities, Angelo notes that teachers must provide time for well-planned, focused, and interactive student discussions. He further connects these activities

¹⁸ Leicester, M. *Teaching Critical Thinking Skills*, Continuum, 2010. p. 3.

¹⁹ Ibid., p. 4.

²⁰ Halpern, D. "Teaching Critical Thinking for Transfer Across Domains: Dispositions, Skills, Structure Training, and Metacognitive Monitoring." *American Psychologist*, 53:4, 1998.
<http://projects.ict.usc.edu/itw/vtt/HalpernAmPsy98CritThink.pdf>. p. 451.

²¹ Bulleted points taken verbatim from ibid.

²² Adsit, Op. cit.

to problem-solving methods and procedures, while noting that educators should talk through and model various strategies to help students develop the associated skills. Brief, related assessments can then provide quick feedback to evaluate student progress in attaining critical thinking skills and direct classroom instruction for building critical thinking skills.²³

DEFINING COMPLEX PROBLEM SOLVING

Problem solving is also extensively related to critical thinking. The use of the adjective “complex” suggests that there are multiple solutions or a large number of relevant variables and factors to consider.²⁴ Complex problem solving may entail moving from an initial point to an unknown goal by means of overcoming unknown obstacles. The essential aspects include simplifying the complexity, managing uncertainty, and understanding relationships. Researchers have defined problem solving as “any goal-directed sequence of cognitive operations,” as well as “behavioral responses for the purpose of adapting to internal or external demands or challenges.”²⁵ Jonassen also notes that, as problems vary in structure, complexity, dynamicity, and domain specificity, the problem-solving process also varies.²⁶

COMPLEX PROBLEM-SOLVING INSTRUCTION

Jonassen notes that instruction to support problem solving necessarily varies among the different types of problems that exist, including story problems; troubleshooting problems; and case, system, or policy analysis problems.²⁷ All types of problem solving require an individual to construct a mental model of the problem and pursue the solution on the basis of that model.

According to Jonassen, the predominant method for teaching and solving story problems is to translate stories into formulas and solve for the unknown. Students must identify the relationships among entities in the problem on the basis of the underlying structure, rather than on the basis of surface presentation. Jonassen proposes creating a graphical organizer of problem typologies to categorize problems, allowing students to identify methodologies for solving a set of similar problems. An instructional system would then help students understand the problem through an analysis of its structure and use this to gather the necessary tools and information to solve the problem. In practice, educators work through these problems, highlighting the underlying structure and identifying the processes that

²³ Angelo, T. “Beginning the dialogue: Thoughts on promoting critical thinking: Classroom assessment for critical thinking.” *Teaching of Psychology*, 22:1, 1995. pp. 6-7.

²⁴ [1] “Teaching Higher-Order Thinking.” Teach for America. 2011. p. 53.

http://teachingasleadership.org/sites/default/files/Related-Readings/LT_2011.pdf

[2] Funke, J. “Complex Problem Solving.” *Encyclopedia of the Sciences of Learning*. Springer. 2012. p. 683.

http://www.psychologie.uni-heidelberg.de/ae/allg_en/mitarb/jf/Funke_2012_ESL_CPS.pdf

²⁵ *Complex Problem Solving: The European Perspective*. Edited by P. Frensch and J. Funke. Lawrence Erlbaum Associates, Inc., 1995. p. 5.

²⁶ Jonassen, D. *Learning to Solve Problems: An Instructional Design Guide*. Pfeiffer, 2008.

<http://21it.files.wordpress.com/2008/09/pfeiffer-learning-to-solve-problems-an-instructional-design-guide-2004-isbn0787964379.pdf>

²⁷ *Ibid.*, p. 10.

lead to the solution of the problem. After observing an instructor, students should then practice additional problems. Jonassen also highlights the use of problem-solving environments, which is software that breaks problems down and helps students proceed by the methodology he describes.²⁸

Case, system, or policy analysis problems are “complex, ambiguous, and very ill structured.”²⁹ This makes solving these analysis problems inherently difficult, especially within school contexts of assessment based on content knowledge. Without a right answer, students may struggle with the ambiguity, and teachers may struggle to grade student work. However, solving these problems is an important learning experience. These problems are highly dependent on context, including the parameters and constraints unique to the problem. In practicing these problems, it is important to develop specific, authentic tasks for students. Using these specific, authentic tasks, students need to take evidence and formulate arguments with justifications. Instructors should support this process, but they should also use reflective judgment prompts and questions.

Troubleshooting requires more knowledge than critical thinking. For troubleshooting problems, individuals apply experiential knowledge to a system to solve a problem. These problems require the individual to draw on knowledge of potential problems with a specific system.³⁰

As with critical thinking, educators should assess students on their abilities to tackle complex problems.³¹ This should be based on rubrics that identify the desired problem-solving techniques, and this assessment should form the basis for continual dialogue and improvement.

DEFINING JUDGMENT AND DECISION MAKING

According to O*NET, this skill category involves “[c]onsidering the relative costs and benefits of potential actions to choose the most appropriate one.”³² Decision making is important in the professional setting and in life, and there have been programs promoting the development of higher-order thinking and decision-making skills for decades.³³ Academics define decision making as “the process of making choices among competing courses of actions,” and curriculum developers often discard the distinction between decision making and problem solving.³⁴ The general normative model recommends that an individual facing a decision should:

²⁸ Ibid., pp. 20-29.

²⁹ Ibid., p. 36.

³⁰ Ibid., pp. 29-35.

³¹ Ibid., p. 147.

³² “Skills – Systems Skills.” O*NET OnLine. <http://www.onetonline.org/find/descriptor/browse/Skills/2.B.4/>

³³ Beyth-Marom, R., et al. “Teaching Decision Making to Adolescents: A Critical Review.” *Teaching Decision Making to Adolescents*. Edited by J. Baron and R. Brown. Routledge, 1991. p. 19.

³⁴ Ibid., p. 20.

- List relevant action alternatives;
- Identify possible consequences of those actions;
- Assess the probability of each consequence occurring, if the corresponding action were taken;
- Establish the relative importance of each consequence; and
- Integrate these values and probabilities to identify the most attractive course of action, following a defensible rule for making decisions.³⁵

INTEGRATING DECISION MAKING INTO THE CURRICULUM

Decision-making curriculum typically includes an assessment to identify skill levels and track growth. Ross uses an evaluation assessment based on a rubric that identifies five levels of competence within five skills. These five skill areas reflect the main skills associated with decision making in the curriculum, and they include identifying alternatives, identifying criteria, assessing alternatives, summarizing information, and self-evaluation. The five levels of competence reflect increasing depth of thought.³⁶ Figure 3.1 presents a summary of the rubric. Other researchers suggest that evaluation assessments and rubrics should include notions of probability and more concrete consideration of the consequences of decisions.³⁷ As a result, rubrics in practice should expand on the framework presented in Figure 3.1 to align with a more rigorous set of dimensions.

In order to progress in these skill areas, curriculum typically provides worked examples and practice cases. There are several ways in which various curricula differ, but they each focus on presenting students with authentic simulations of decision making and working through these examples first under guidance and then without supervision. Given the similarities to many concepts in the K-12 curriculum, this style of instruction should be readily adaptable to the K-12 context, with age-appropriate content at various levels.

Ross suggests that working through decision-making processes in the classroom can support growth in the five skill areas. In his field tests, teachers present worked examples and then allow students to practice the skills. Unfortunately, the experiments used to validate this approach suffer from a variety of limitations, as Ross notes, but the evidence suggests at least small positive effects.³⁸

³⁵ Bulleted points taken from *ibid*, p. 21.

³⁶ Ross, J. "Improving Adolescent Decision-Making Skills." *Curriculum Inquiry*, 11:3, 1981. pp. 279-295.

³⁷ Beyth-Marom, et al., *Op. cit.*, p. 36.

³⁸ Ross, J., *Op., cit.*, pp. 288, 293.

Figure 3.1: Rubric for Evaluating Decision-Making Skills among Adolescents

| LEVEL | IDENTIFYING ALTERNATIVES | IDENTIFYING CRITERIA | ASSESSING ALTERNATIVES | SUMMARIZING INFORMATION | SELF-EVALUATION |
|-------|--|---|---|---|---|
| 5 | Constructing alternatives using criteria | Criteria are general principles, combining considerations of self and others in a consistent manner | Assignment of interval scale values along criteria | Decision based on assigning weights to criteria and applying a multiplicative rule | Development and testing of a generalized principle |
| 4 | Constructing alternatives by classifying | Criteria refer to others | Assignment of ordinal values along criteria | Elimination of alternatives by criteria, acknowledging inequality in the importance of different criteria | Use of an alternative decision rule to check robustness |
| 3 | Brainstorming alternatives with others | Self-referenced criteria, disregard others | Assignment of positive and negative association along criteria | Decision based on an additive rule applied to values assigned | Introduction of time dimension, considering future events in judging the process and choice |
| 2 | Small list of identified off the top of one's head | Comparing alternatives on inconsistent dimensions | Assignment of advantages and disadvantages on inconsistent dimensions | Choose best alternative based on the most important criterion | Repetition of decision-making process to check |
| 1 | Single alternative identified | No criteria | Justification of a single alternative with arbitrary explanation | Decision based on cursory summary of basic information | Rationalization of choice by basic explanation |

Source: Ross³⁹

Another example program is the Odyssey curriculum. The Odyssey curriculum assumes that the main components for decision making are information and interpretation.⁴⁰ Given all necessary information, the only obstacle should be the ability to interpret the information, and given the ability to understand all available information, the only obstacle should be the amount of relevant information available. The curriculum teaches students to solve complex problems by simplifying them and breaking them into simpler components. The curriculum was implemented in Venezuela in the 1980s, with positive results for the construction of complex problem-solving and decision-making abilities. The core of the curriculum focuses on developing the ability to compare alternatives on dimensions and the relative importance of dimensions, which developers intend instructors to convey through substantial indirect teaching and discussion, in addition to some direct instruction.

³⁹ Table contents summarized from Ross, Op. cit.

⁴⁰ Adams, M., and C. Feehrer. "Thinking and Decision Making." "Teaching Decision Making to Adolescents: A Critical Review." *Teaching Decision Making to Adolescents*. Edited by J. Baron and R. Brown. Routledge, 1991. pp. 79-94.

SECTION IV: MONITORING, COORDINATION, AND SOCIAL PERCEPTIVENESS

This section reviews monitoring, coordination, and social perceptiveness, which relate to working in teams and working with others, as well as working individually.

DEFINING MONITORING AND COORDINATION

The O*NET database defines monitoring as monitoring and assessing the “performance of yourself, other individuals, or organizations to make improvements or take corrective action.”⁴¹ This skill contains several layers, as it involves self-monitoring and self-assessment, as well as monitoring and assessing other individuals and organizations. O*NET defines coordination as “adjusting actions in relation to others’ actions,”⁴² which has important implications for teamwork. As a result, **this section examines the potential for integrating self-monitoring and teamwork skills into the curriculum.**

TEACHING SELF-MONITORING

In education, many academics view self-monitoring as a component of an individual’s ability to self-regulate. Researchers broadly define this concept as “the effort put forth by students to deepen, monitor, manipulate, and improve their own learning.”⁴³ Instructional principles for supporting self-regulation provide insight into how to support monitoring, and all of these principles may be useful for instruction that supports students’ ability to work individually and in teams.

Based on research covering six components of self-regulation, Ley and Young propose four principles for instructional support. The six components are goal setting, preparing a place to study, organizing materials, monitoring learning, evaluating progress and effectiveness, and reviewing tests. The four principles for teaching students these components of self-regulation are as follows:

- Guide learners to prepare and structure an effective learning environment,
- Organize instruction and activities to facilitate cognitive and metacognitive processes,
- Use instructional goals and feedback to present student monitoring opportunities, and

⁴¹ “Skills – Basic Skills,” Op. cit.

⁴² “Skills – Social Skills.” O*NET OnLine. <http://www.onetonline.org/find/descriptor/browse/Skills/2.B.1/>

⁴³ Ley, K., and D. Young. “Instructional Principles for Self-Regulation.” *Educational Technology Research and Development*, 49:2, 2001. p. 93.

- Provide learners with continuous evaluation information and occasions to self-evaluate.⁴⁴

For structuring the environment, educators could have students complete checklists of their study environments and suggest a list of environmental structuring activities and strategies for coping with distractions. Organizing material in a way that is most conducive to learning is another important component of self-regulating. Research suggests that instruction with advance or graphic organizers, concept mapping, and previews can advance learning and help students learn to organize information. Graphic organizers are hierarchical tree diagrams of the key terms and concepts in a text. Concept maps visual represent information, such as an introduction or summary of concept relationships within a module or chapter. Previews are detailed narratives meant to activate knowledge and aid both organization and reading comprehension when read prior to the text that the narrative describes.⁴⁵

Monitoring depends mainly on feedback and goal setting. According to researchers, “monitoring is the cognitive process that assesses the state of progress relative to goals and generates feedback that can guide further action.”⁴⁶ Accordingly, instruction designed to promote monitoring should include goal setting and feedback. For instance, instruction could prompt learners to observe and record whether or not they complete intermediate steps within a complex assignment, or instructors could require students to track progress in multi-step assignments through reporting or interim product assignments. In addition, instructors may encourage self-monitoring by providing external feedback and monitoring.⁴⁷

Building on monitoring, self-evaluation entails the student comparing his or her performance to established standards. Here, the instructor can work with the student to understand how well the student’s strategy is performing and where and how the student could improve. The intent is to develop the student’s ability to make these reflections without teacher support in the future. This reflection and evaluation compares the student to independent benchmarks of mastery and progress, rather than comparing the student to peers.⁴⁸

TEACHING SKILLS FOR WORKING IN TEAMS

One method for supporting the skills necessary for working in teams is known as team-based learning. Team-based learning is a structural approach to instruction that requires students to “monitor and improve their interactions and performance over an extended period of time, which helps increase their interpersonal skills.”⁴⁹ Used mainly in a college

⁴⁴ Bulleted points taken verbatim from *ibid.*, pp. 94-95.

⁴⁵ *Ibid.*, pp. 95-97.

⁴⁶ *Ibid.*, p. 97.

⁴⁷ *Ibid.*, pp. 97-98.

⁴⁸ *Ibid.*, pp. 98-100.

⁴⁹ Goltz, *Op. cit.*, p. 542.

setting, this structure provides students with fixed groups for the duration of a course, with both individual and group assessment.

Cooperative learning is another method of developing the skills necessary to work in teams and with others. In order to develop the skills necessary for working in cooperative contexts, cooperative learning focuses students on ensuring that all individuals in a group make progress and succeed. Johnson and Johnson identify three types of interaction patterns or environments, including competitive, individual, and cooperative. Competitive patterns include instances where the success of one necessarily entails the defeat of others. Individual patterns are instances where the performance of others is not relevant, and one defines success on the basis of an independent criterion or independent criteria. The third scenario is a cooperative environment, where the success of each individual is positively related to the success of others.⁵⁰

Putting students into groups is not sufficient to encourage cooperative learning or a cooperative environment. Johnson and Johnson highlight five elements of cooperative learning, including:

- Clearly perceived positive interdependence,
- Considerable promotive (face-to-face) interaction,
- Clearly perceived individual accountability and personal responsibility to achieve the group's goals,
- Frequent use of the relevant interpersonal and small-group skills, and
- Frequent and regular group processing of current functioning to improve the group's future effectiveness.⁵¹

These elements are important for ensuring that students are engaged in a scenario where cooperative learning will occur, rather than a scenario where one or more individuals within the group are contributing nothing while a subset of the group performs all relevant tasks. Concrete methods of creating the perception and reality of positive interdependence include providing a group-based goal or additional rewards for group performance, as well as distributing the resources and roles necessary for task completion among various members. This cooperative environment encourages promotive interaction, which entails multidirectional feedback among participants.

Individual accountability and responsibility is also important to ensure that each participant completes his or her share of work. Generally, students learn in a cooperative group and then demonstrate mastery individually. Johnson and Johnson note the following common methods of structuring groups and assignments to ensure individual accountability:

⁵⁰ Johnson, R., and D. Johnson. "An Overview of Cooperative Learning." http://teachers.henrico.k12.va.us/staffdev/mcdonald_j/downloads/21st/comm/BenefitsOfCL/OverviewOfCoopLr ng_Benefits.html (originally published in *Creativity and Collaborative Learning*. Edited by J. Thousand, A. Villa, and A. Nevin. Brookes Press, 1994.).

⁵¹ Bulleted points taken verbatim from *ibid.*

- Keeping the size of the group small. The smaller the size of the group, the greater the individual accountability may be.
- Giving an individual test to each student.
- Randomly examining students orally by calling on one student to present his or her group's work to the teacher (in the presence of the group) or to the entire class.
- Observing each group and recording the frequency with which each member contributes to the group's work.
- Assigning one student in each group the role of checker. The checker asks other group members to explain the reasoning and rationale underlying group answers.
- Having students teach what they learned to someone else. When all students do this, it is called simultaneous explaining.⁵²

Johnson and Johnson also note the importance of social skills upon entrance into a group, and they recommend additional social skills instruction. The pillars of working together include trust, communication, support, and conflict resolution. Skills in these areas must be developed over time through instruction, modeling, reinforcement, and practice.⁵³ These skills can also contribute to social perceptiveness, discussed below.

The fifth and final element that the researchers identify is group processing, which is self-reflection at the group level. Group members should discuss with one another what actions and strategies are helpful and which are not helpful. Instructors should engage students in small group reflection and processing, as well as whole-class reflection and processing. Johnson and Johnson note that teachers should observe each group in turn and provide feedback with regard to how group members are working together. Teachers may collect data and provide formal written feedback to individuals and groups. Another method of processing is for each group to have a peer observer providing informal or formal data and feedback.⁵⁴

DEFINING SOCIAL PERCEPTIVENESS

Social perceptiveness relates to the emotional ability to both understand the perspectives of others and understand how to work with others. O*NET defines social perceptiveness as being “aware of others’ reactions and understanding why they react as they do.”⁵⁵ Killick equates social perceptiveness with empathy, defining empathy as “the ability to see how another person is feeling or seeing the world, that is, social perceptiveness.”⁵⁶ Gilbert and Kottke, academic psychologists focused on measuring social perceptiveness, define the concept as “the capacity to be aware of the needs, goals, and feelings of others and the

⁵² Bulleted points taken verbatim from *ibid.*

⁵³ *Ibid.*

⁵⁴ *Ibid.*

⁵⁵ “Skills – Social Skills,” *Op. cit.*

⁵⁶ Killick, *Op. cit.*, p. 10.

greater social environment, which includes multiple others in the organization.”⁵⁷ Johnson and Johnson refer to social perspective taking and contrast this skill with egocentrism.

Social perspective taking is the ability to understand how a situation appears to another person and how that person is reacting cognitively and emotionally to the situation. The opposite of perspective taking is egocentrism, the embeddedness in one’s own viewpoint to the extent that one is unaware of other points of view and of the limitations of one’s perspectives.⁵⁸

TEACHING SOCIAL PERCEPTIVENESS

Researchers and experts provide a variety of ideas for teaching social perceptiveness, with many methods emphasizing role-taking and practice with applying social perceptiveness skills. Researchers from the Harvard Graduate School of Education found empirical evidence to suggest increased social perceptiveness after taking part in a simulation or reading a detailed narrative that immerses the participant in the perspective of another individual.⁵⁹ Johnson and Johnson note evidence that cooperative learning promotes a heightened ability to understand the perspectives of others and incorporate this into decision making.⁶⁰

Denise Cavner presents a variety of principles and concrete examples for developing empathy in the early stages of education. Having studied mental health, psychology, and early childhood education, Cavner focuses on the mechanics of building empathy through basic activities and simple classroom management. She recommends practicing empathy and social perceptiveness by having students care for a plant, a stuffed animal, or even a real animal, such as a hamster. Furthermore, instructors should provide ample opportunities for discussing emotions and conversing about how a child would feel if he or she were in another child’s shoes.⁶¹ The Appendix of this report provides a fuller list of Cavner’s concrete suggestions.

Researchers also offer additional potential methods for teaching empathy to students. One potential method is to have students read and discuss controversial stories with valued conclusions. These stories and discussions help students gain insight into the lives of others. Similarly, educators should allow and encourage students to share stories about injustices that they, or those close to them, have suffered. Furthermore, instructors can use multimedia content to model various situations, and guest speakers in the classroom can bring to life these discussions of the lives of others.⁶²

⁵⁷ Gilbert, J., and J. Kottke. “Developing a Measure of Social Perceptiveness.” Presented at the Annual Conference of the Association for Psychological Science, 2009. p. 2.

http://psychology.csusb.edu/facultystaff/docs/GilbertKottke%20APS%202009%20Social_PerceptivenessFINAL%20COPY.pdf

⁵⁸ Johnson and Johnson, Op. cit.

⁵⁹ “Social Aspects of Immersive Learning: Selected Findings.” Harvard Graduate School of Education.

<http://isites.harvard.edu/icb/icb.do?keyword=sail&pageid=icb.page480530>

⁶⁰ Johnson and Johnson, Op. cit.

⁶¹ Cavner, D. “Teaching Empathy.” *Exchange*, 2008. pp. 92-94. <https://secure.ccie.com/library/5017992.pdf>

⁶² Hollingsworth, L., M. Didelot, and J. Smith. “REACH Beyond Tolerance: A Framework for Teaching Children Empathy and Responsibility.” *Journal of Humanistic Counseling, Education and Development*, 42, 2003. pp. 144-145.

SECTION V: TIME MANAGEMENT

This section reviews time management and literature discussing potential strategies for incorporating time management instruction into the curriculum.

DEFINING TIME MANAGEMENT

O*NET defines time management as “[m]anaging one’s own time and the time of others.”⁶³ In the academic literature, however, “[t]here is no agreement on the definition of time management” or the component concepts that comprise effective time management skills.⁶⁴ For academic purposes, Lakein’s definition is the most widely accepted. Lakein suggests that “time management involves the process of determining needs, setting goals to achieve these needs, prioritising and planning tasks required to achieve these goals.”⁶⁵ The objective of time management techniques and skills is to maximize time efficiency for performing tasks and achieving goals, which necessarily includes self-management. As observed by Claessens, et al., **time management is actually concerned with managing the way one deals with time, rather than the managing of time.**⁶⁶

TEACHING TIME MANAGEMENT

In agreement with general literature regarding time management, **educators recommend teaching time management by integrating time awareness and time-structuring activities into the entire school day.** Claessens, et al., note that the core elements McCay developed in 1959 still manifest themselves in most time management instruction. These include giving insight regarding time-consuming activities, changing time allocation, and teaching planning, prioritization, and methods for handling unexpected tasks.⁶⁷ Teachers can help by creating regular schedules and encouraging students to predict the amount of time that various activities require. Moreover, for lengthier projects, teachers can assist students in learning time management by breaking the project into smaller increments with intermediate deadlines.⁶⁸ As this suggests, **methods for time management can overlap with strategies for teaching self-monitoring.**

Sandra Rief presents a variety of principles and concrete strategies for improving time management. While her focus is on improving time management among students with attention deficit disabilities, her concepts are highly relevant for teaching all students. Rief

⁶³ “Skills – Resource Management Skills.” O*NET OnLine.

<http://www.onetonline.org/find/descriptor/browse/Skills/2.B.5/>

⁶⁴ Claessens, B., et al. “A Review of the Time Management Literature.” *Personnel Review*, 36:2, 2007. p. 262.

⁶⁵ Ibid.

⁶⁶ Ibid., p. 256

⁶⁷ Ibid.

⁶⁸ Rief, S. “What Teachers Can Do to Help with Time Management.” SandraRief.com.

http://www.sandrariief.com/tips/tips_timeman/ (adapted from: Rief, S. *The ADD/ADHD Checklist: A Practical Reference for Parents & Teachers*, 2nd edition, 2008; Rief, S. *How to Reach & Teach Children with ADD/ADHD*, 2nd edition, 2005; and Rief, S. *The ADHD Book of Lists*, 2003).

suggests that teachers have students estimate the time required for or spent on various activities. Furthermore, she recommends that teachers structure class time in conjunction with students and structure assignments with intermediate deadlines.⁶⁹ The Appendix of this report contains a list of specific recommendations for teaching time management skills.

There is a wealth of educational resources regarding time management with sample activities.⁷⁰ These resources reflect the best practices identified in the literature and provide time management instruction through a curriculum that is already developed.

⁶⁹ Ibid.

⁷⁰ [1] "Teaching Time Management at School." Super Duper Publications.
http://www.superduperinc.com/handouts/pdf/333_Time_Mgmt_at_School.pdf
[2] "Resources by Topic: Time Management." PBSKids.
http://www.pbs.org/parents/itsmylife/resources/time.html?anchor=lesson_plans

CONCLUSION

Schools can focus on several critical areas of soft skills to prepare students for postsecondary success in a variety of occupations, as well as postsecondary education.

Communication skills, especially active listening, are of paramount importance. In addition to speaking, reading comprehension, and writing, there is a high demand for individuals with the ability to attentively listen and absorb information. Communication is critical in the workplace and the academic setting, and there are methods for incorporating this skill into the curriculum both within ELA and across subject areas. Educators can structure instructional time to ensure that there is significant time spent working on active and effective communication, and should strive to model active listening with their students. Other communication skills can be honed through essays, reading comprehension exercises, and presentations in various subject areas. There are also opportunities for incorporating multiple skills simultaneously, such as evaluating the class on active listening during presentations by other students.

Critical thinking, problem solving, and decision making are also important for postsecondary success. As individuals move into the postsecondary world, performance becomes increasingly based on solving problems and making decisions. Curricula for teaching these skills in a school setting mostly rely on two components. The first component is instruction based on worked examples and practice. Guidance and supervision should gradually lessen as students learn, either individually or in groups, to tackle problems by simplifying and solving complex situations. The second component consists of assessments designed to evaluate the level of thinking and analysis that students are applying. Rubrics and testing styles vary extensively, but they all focus on testing students, individually or in a group, through an example problem or case situation.

Postsecondary success also requires skills for working in teams, as well as being able to produce high-quality work individually. Both postsecondary education and employment require individuals to be able to work with others and hold themselves accountable for results. In order to develop these skills, literature recommends modeling social intelligence behavior and self-regulation, as well as creating role-playing and cooperative environments. For teaching self-regulation, educators should prod students to actively track their progress and evaluate their strategies. For working cooperatively, instructors should provide learning situations where students' success is positively tied to the performance of others in a group. Putting students together to work in groups is insufficient, for students must also have personal and group accountability for results, as well as the social skills for working together. By tying performance for each individual to the performance of the group, in whole or in part, a teacher creates the incentives necessary to ensure that all of the group members are committed to working cooperatively. Modeling and practicing social perceptiveness is also important for developing an understanding of how others think and view the world. These exercises help students learn how to interact with others.

Time management is an essential skill for both postsecondary education and the workplace, and being efficient with the allocation of time is important throughout life. In order to develop this skill, literature recommends modeling time management and guiding students through structuring their time. In addition, teachers can help students become aware of how they use time by having students estimate the time for various tasks. Setting intermediate deadlines can help students build the mindset of breaking long processes into individual components, which helps prevent time mismanagement.

Across disciplines, there are clear ways to incorporate these skills into the curriculum. The main methods involve modeling behavior, working examples, and reinforcing skills through practice. Improving student competencies in these soft skills will pay large dividends in postsecondary success for these students. As a result, integrating soft skill instruction should be a priority for K-12 curriculum programming.

APPENDIX

This appendix includes concrete examples of strategies and actions that educators can take to integrate skills instruction into the classroom and the curriculum.

ACTIVE LISTENING

Jalongo provides 11 specific suggestions for building children’s listening skills throughout the school day, each drawing from academic research:

- Incorporate listening goals into student portfolios: “One of the sections in your portfolios is ‘Listens and responds to stories read aloud.’ Please put your best drawings, stories and activities based on the books I have read out loud in that section.”
- Throw children a “vocabulary curve: [...] All the canine owners line up.”
- Refer some of children’s questions back to the group: “What do you think?”
- Use visualization techniques: “Can you imagine what a cross between a zebra and a giraffe would look like?”
- Use graphic organizers: “Now that we have read *Rosie’s Walk*, see if you can draw a map of her trip through the barnyard.”
- Conduct interviews: “Ms. Stazey, the veterinarian who is visiting today, will be answering the questions that you wrote yesterday about animal care. After we finish interviewing her, we will be writing a story for our class newspaper that summarizes her advice.”
- Use collections: “Today I brought in my teddy bear collection. Do you collect anything? Why do people have collections? After your group creates a collection of rocks, leaves or shells, you will be telling us about it.”
- Use reenactment: “We know this story very well now. As I read the story, I want you to play the parts of the story characters.”
- Explain how something functions: “Today I brought in an interesting household gadget that we can use at the snack table. It slices hardboiled eggs. After your turn using it, I want you to explain to the next person how it works.”
- Try partner art: “We have been working on including specific details in our writing. I have assembled the class into the pairs shown on this list. All of the people listed first in the pair will describe some common object that they know very well – their dog, their house. The second person will listen carefully and try to draw a picture based on what he or she has heard. The first person is not allowed to see the picture until it is done.”
- Use K-W-L: “There are three columns on this chart: the K stands for what we *know*, the W for what we *want* to know and the L for what we have *learned*. We will fill out

the first two columns together before we go on our field trip, then we will in the last column after we return.”⁷¹

CRITICAL THINKING

Halpern offers the following activities and strategies for fostering critical thinking:

- Draw a diagram or other graphic display that organizes the information. (This sort of task makes the structure of a problem or argument clear.)
- What additional information would you want before answering the question? (This requires the thinkers- learners to think about what is missing from the information that is given.)
- Explain why you selected a particular multiple-choice alternative. Which alternative is second best? Why? (The giving of reasons is a good way to focus on the thinking that went into an answer rather than the answer itself.)
- State the problem in at least two ways. (Most real-world problems are fuzzy, that is, they really are potentially many problems, each with its own possible solution.)
- Which information is most important? Which information is least important? Why? (This question focuses the learners' attention on the value of different sorts of information.)
- Categorize the findings in a meaningful way. (By grouping or labeling individual pieces of information, a structure emerges that is not apparent when they are kept separate.)
- List two solutions for the problem. (This encourages a more creative approach.)
- What is wrong with an assertion that was made in the question? (This reminds the learners that problems often contain misleading information.)
- Present two reasons that support the conclusion and two reasons that do not support the conclusion. (Questions of this sort do not permit black-and-white reasoning.)
- Identify the type of persuasive technique that is used in the question. Is it valid, or is it designed to mislead the reader? Explain your answer. (Learners are required to consider the motives and credibility of their information source when responding to these questions.)
- What two actions would you take to improve the design of a study that was described? (Learners need to think about better types of evidence or procedures that might have provided different results.)⁷²

⁷¹ Jalongo, Op. cit., pp. 17-18.

⁷² Bulleted points taken verbatim from Halpern, Op. cit.

Adsit compiles several teaching strategies designed to help promote critical thinking. Drawing from peer-reviewed literature, she presents the following annotated list of strategies:

- **CATS (Classroom Assessment Techniques):** Angelo stresses the use of ongoing classroom assessment as a way to monitor and facilitate students' critical thinking. An example of a CAT is to ask students to write a "Minute Paper" responding to questions such as "What was the most important thing you learned in today's class? What question related to this session remains uppermost in your mind?" The teacher selects some of the papers and prepares responses for the next class meeting.⁷³
- **Cooperative Learning Strategies:** Cooper (1995) argues that putting students in group learning situations is the best way to foster critical thinking. "In properly structured cooperative learning environments, students perform more of the active, critical thinking with continuous support and feedback from other students and the teacher."⁷⁴
- **Case Study / Discussion Method:** McDade (1995) describes this method as the teacher presenting a case (or story) to the class without a conclusion. Using prepared questions, the teacher then leads students through a discussion, allowing students to construct a conclusion for the case.⁷⁵
- **Using Questions:** King (1995) identifies ways of using questions in the classroom:
 - *Reciprocal Peer Questioning:* Following lecture, the teacher displays a list of question stems (such as, "What are the strengths and weaknesses of..."). Students must write questions about the lecture material. In small groups, the students ask each other the questions. Then, the whole class discusses some of the questions from each small group.
 - *Reader's Questions:* Require students to write questions on assigned reading and turn them in at the beginning of class. Select a few of the questions as the impetus for class discussion.⁷⁶
- **Conference Style Learning:** The teacher does not "teach" the class in the sense of lecturing. The teacher is a facilitator of a conference. Students must thoroughly read all required material before class. Assigned readings should be in the zone of proximal development. That is, readings should be able to be understood by students, but also challenging. The class consists of the students asking questions of each other and discussing these questions. The teacher does not remain passive, but rather, helps "direct and mold discussions by posing strategic questions and helping students build on each other's ideas."⁷⁷

⁷³ Angelo, T., quoted in Adsit, Op. cit.

⁷⁴ Cooper, J., quoted in Adsit, Op. cit.

⁷⁵ McDade, S., quoted in Adsit, Op. cit.

⁷⁶ King, A., quoted in Adsit, Op. cit.

⁷⁷ Underwood, M., and R. Wald, quoted in Adsit, Op. cit.

- **Use Writing Assignments:** Wade sees the use of writing as fundamental to developing critical thinking skills. “With written assignments, an instructor can encourage the development of dialectic reasoning by requiring students to argue both [or more] sides of an issue.”⁷⁸
- **Dialogues:** Robertson and Rane-Szostak (1996) identify two methods of stimulating useful discussions in the classroom:
 - *Written dialogues:* Give students written dialogues to analyze. In small groups, students must identify the different viewpoints of each participant in the dialogue. Must look for biases, presence or exclusion of important evidence, alternative interpretations, misstatement of facts, and errors in reasoning. Each group must decide which view is the most reasonable. After coming to a conclusion, each group acts out their dialogue and explains their analysis of it.
 - *Spontaneous Group Dialogue:* One group of students [is] assigned roles to play in a discussion (such as leader, information giver, opinion seeker, and disagreeer). Four observer groups are formed with the functions of determining what roles are being played by whom, identifying biases and errors in thinking, evaluating reasoning skills, and examining ethical implications of the content.⁷⁹
- **Ambiguity:** Strohm & Baukus advocate producing much ambiguity in the classroom. Don't give students clear cut material. Give them conflicting information that they must think their way through.⁸⁰

SOCIAL PERCEPTIVENESS

Cavner presents the following strategies for teaching empathy:

- Have live plants and/or a garden for the children to care for. Children can work together to create and care for living plants. Children will learn quickly how their care is required to keep the plants alive.
- By having a pet in the classroom for the children to care for, the children will learn the responsibility of providing food and water for the pet's survival. They will also be able to build a bond or relationship as they care for the pet. If the children are too young or unable to care for a living creature or there is a fear that the animal may be harmed, a stuffed animal can be introduced as a new member of the class. A stuffed bear needs love and caring, too. The children can name the class mascot and care for him during class and on weekends. A journal can be kept of the pet's weekend adventures. Children will begin to think about another's feelings as they imagine what their pet was thinking and feeling.
- Talk with the children in the classroom about those who are absent. Where are they? Why are they not at school? Are they sick? Are they visiting a friend? Will they be missed at school? What fun activities will they be missing while they are absent?

⁷⁸ Wade, C., quoted in Adsit, Op. cit.

⁷⁹ Robertson, J., and D. Rane-Szostak, quoted in Adsit, Op. cit.

⁸⁰ Strohm, S., and R. Baukus, quoted in Adsit, Op. cit.

- Provide ample opportunities for children to discuss their emotions. Supply children with the vocabulary to use in explaining their feelings. Discuss all feelings equally. Remember there are no wrong feelings. But there are appropriate ways to express feelings.
- Read books that lead to discussions about emotions. Include books that lead to discussions about some of the more uncommon feelings (for example, jealousy or envy) or those that may be difficult to discuss (for example, embarrassment or shame).
- Provide role modeling opportunities. It is important to teach appropriate behaviors when children are not angry. When a child is overwhelmed by their emotions, it is difficult for them to apply reason or to think beyond themselves. Discussing scenarios during small group activity time gives children the opportunity to practice skills and use their reasoning abilities.
- Discuss facial expressions. Young children are just beginning to learn how to interpret facial expressions. It is difficult for a child to recognize how their actions are affecting their playmates, and because children do not have the expressive language that an adult has, it is not until the other child hits them or cries out that they realize that they were bothering her.
- The mind and body are connected and when children feel emotion it affects their body sensations (for example, anger and embarrassment feel 'hot' and happiness feels 'bubbly'). Talking to children about these sensations will help them understand and recognize how their bodies are affected by emotion and to gain better control.
- Assist the child who has caused the conflict or pain, in talking to the other child about their feelings over what just happened. This can be done by role modeling, offering the words, or standing nearby as support.
- Assist the children in problem solving together and offer suggestions in how they can correct the situation. With the familiar scenario mentioned in the opening statement, one solution could be to rebuild the block structure together. The child who knocked down the structure can now feel the pride in his accomplishment of creating a building and gain a better understanding of how it would feel to have something he built knocked down.⁸¹

TIME MANAGEMENT

Rief proposes the following strategies for improving time management among students, with a focus on students with attention difficulties:

Time Awareness

- Any opportunity to practice time estimation is very helpful towards increasing time awareness:

⁸¹ Bulleted points taken verbatim from Cavner, Op. cit.

- Challenge your students to estimate how long it takes to walk to the office and back (without running), or any other task, and then time it.
- Make a game out of predicting, timing, and checking the students' time estimates for various activities.
- Encourage self-monitoring during independent seatwork time by recording the start time on the paper. When the work period is over, record the stop time. This is helpful for the student to gain time awareness and also in tracking how much work is accomplished during a measured time frame.

Assignment Sheets, Calendars, Student Planners/Agendas

- Communicate and maintain the clear expectation that all assignments are to be recorded on students' assignment calendars, and monitor that this is occurring.
- Model the writing of assignments on the calendar by writing down and projecting a copy of the filled-in planner (e.g., using a document camera). Allow sufficient time at the beginning or end of class to do so.
- Provide assistance to students who have difficulty recording assignments in their calendar/planner/assignment sheet. Monitor that assignments are recorded accurately.
- Routinely ask table partners or groups seated together to check each other's planner/calendar that everything is accurately recorded.
- Keep a master monthly calendar posted in the classroom, recording special activities and events that are scheduled and assignments due.
- If using a daily planner or assignment sheet, also provide students with a single- or double-page monthly calendar. For important dates they can see at a glance. Help them record due dates of projects, tests, class trips, and other important activities and events for the month onto the monthly calendar. Or...provide one already filled out for students with those important dates.

Schedules

- Establish a daily routine and schedule for the classroom.
- Post all schedules and refer to them throughout the day.
- Walk through the schedule each day and point out any changes in the daily/weekly schedule or routine that will be taking place.
- With younger students, use a pictorial schedule depicting the daily routine.
- For students receiving special education/related services, write down their weekly schedule and tape it to their desks. Keep accessible each of your students' special schedules so that you know at all times the days and times they are pulled out of class, or when service providers are coming to the classroom to work with the student.

- Encourage students and parents to carefully plan a weekly schedule, including an established homework/study schedule. Ask parents to first help their son or daughter become aware of how much time he or she spends in a typical day on all activities from school dismissal until bedtime.

Long-Term Projects

- Structure any long-term assignments (e.g., book reports, research projects, science fair projects) by breaking them into smaller, manageable increments.
- Make sure students have access to needed materials.
- Assign incremental due dates to help structure the timeline towards project completion. For example, assign separate due dates for stages of the project (getting a topic approved, outline submitted, research notes/resources listed, turning in first draft, etc.).
- Call close attention to due dates. Post those due dates and frequently refer to them as reminders.
- Provide extra communication to parents of students with ADHD. Perhaps call or email them to make sure they are aware of the projects, and have at least one copy of the handout explaining project guidelines, with its timeline and scoring rubric to keep posted at home.
- Suggest to parents that they closely monitor timelines and help with pacing (e.g., get started promptly on selecting a topic and beginning their research).
- Monitor progress by asking to see what the student has accomplished so far, and provide a lot of feedback along the way.
- Consider providing some of your ADHD students and their parents advanced notice about upcoming projects and reports, enabling them to have a “head start” (especially with planning and research).

Other Ways Teachers Can Help

- Provide students with a course outline or syllabus.
- Assist with prioritization of activities and workload.
- Teach young students (and check older ones to make sure they know) how to tell time and read a non-digital (analog) clock.
- Teach students how to read calendars & schedules.
- Make sure that ALL assignments, page numbers, due dates, etc. are presented to students both verbally and visually.
- Post all assignments written clearly and easy to read in a consistent place in the room (e.g., corner of the board).

- Utilize “things to do” lists, modeling for the class and teaching how to write down and cross off accomplished tasks.
- Provide enough time during transitions to put material away and get organized for the next activity.
- Teach students how to self-monitor on-task behavior so that they are using class time effectively for getting work done. For example, recording how many pages they read during silent reading time.
- Include “seated by beginning bell time,” “completed class assignments” or other target behavior indicating student’s punctuality or effective use of class time on the daily report card or daily/weekly monitoring form.
- If tardiness is an issue with the student, try an individual contract to motivate the student to improve behavior.
- Provide extended time as needed, and consider more flexibility with regard to accepting late work.
- Use frequent praise and positive reinforcement. Reward for meeting deadlines and finishing in-school assignments on time.
- Allow students with ADHD to use electronic tools (set to vibrate) as reminders to keep track of time.⁸²

⁸² Bulleted points taken verbatim from Rief, Op. cit.

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