The Methodology Behind Integrating Essential College and Career Skills Into Everyday Curricula

First in Series of White Papers Demonstrating the Methodology, Measurement and Validity of the Pairin Readiness Management System™

PRESENTED BY PAIRIN
November 2, 2015
Today, there is a national shift
to develop the “whole student”
beyond the academic necessities.

Known as Essential College and Career (EC) Skills (or social emotional or 21st century skills), researchers have consistently found that EC Skills play a significant role in encouraging student success. Moreover, there is a growing body of research recommending EC Skills be a part of any comprehensive learning or development program. As this trend continues, educators are faced with a daunting challenge they are not fully prepared to address: How to integrate EC Skills into everyday curricula?

Compounding this issue is a prevailing view of some educators that teaching EC Skills is beyond the scope of conventional academics, as well as skepticism that such “soft” skills cannot be adequately assessed, nor measured, let alone taught. Teachers and school administrators also worry that there is simply not enough time to add EC Skills instruction to an already overcrowded curriculum. Legislation mandating scrutiny of “teacher effectiveness”, based in part on student test scores, continues to expand, leaving educators afraid to dedicate classroom time to anything but content.

This white paper details an informed methodology for integrating Essential College and Career (EC) Skills into any curriculum. It addresses the importance of measurability but also illustrates that teaching EC Skills need not come at the expense of traditional academics. At the conclusion of this paper, it is our intent that even the most skeptical educator will see that integrating EC Skills alongside traditional content can actually save teachers time while better preparing students.

Dr. Tara Laughlin’s comprehensive methodology was thoroughly tested during a pilot program at a Colorado middle school from 2013 to 2014. Quantitative results of her research into this more robust form of instruction demonstrated significant student improvement in both traditional content and EC skills. Results showed increases in student academic performance, also suggesting improved classroom management and less time spent re-teaching material. The end result for teachers included more effective use of time teaching academic content as well as students who were better prepared for high school, college and careers.
Part 1: Why EC Skills Matter
Part 1: Why EC Skills Matter

Originally, the U.S. system of education was designed to prepare students for a life of repetitive, industrialized work. Priority was placed on memorization, task completion, and following directions. While these skills were important for students destined to work in factories or routine labor occupations, they are no longer adapted to the world we live in today. In recent decades, the number of manual and routine jobs has steadily declined within the United States in favor of more complex, non-routine forms of employment. The following graph illustrates this trend.

Trends in Occupation Type

(Adapted from Autor & Price, 2013)
Addressing the Skills Gap

Modern non-routine analytic and interpersonal jobs require proficiencies in critical thinking, problem solving, creativity, and other areas that have received limited classroom attention.

To address the persistent gap between employer needs and employee skills, Pairin and other members of the public/private education consortium known as Project: BeReady consulted with a range of employers and teachers to develop a priority list of 20 EC Skills comprising the attitudes, motivations, and behaviors that most lead to success. (See sidebar)

Given the increased significance of such EC Skills—from their necessity in college and the workplace to their inclusion in the Common Core State Standards and in forthcoming national assessments—it is essential for teachers to make adjustments to their pedagogy by integrating these skills into their curricula.

As a critical literature review on the issue conducted by a team of experts at the University of Chicago concluded:

“If we are truly to be a nation of college-goers, we must not only raise the bar on what students learn, but we must also leverage an understanding of noncognitive factors to teach adolescents how to become effective learners. In the absence of developing students as learners, current reform efforts are unlikely to succeed at increasing students’ readiness for college.”

Farrington, 2012

<table>
<thead>
<tr>
<th>Personal (Self-Management)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flexibility &amp; Adaptability</strong></td>
</tr>
<tr>
<td><strong>Self-Awareness</strong></td>
</tr>
<tr>
<td><strong>Self Control</strong></td>
</tr>
<tr>
<td><strong>Optimism</strong></td>
</tr>
<tr>
<td><strong>Self-Regard and Balance</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional (Work Ethic and Leadership)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership</strong></td>
</tr>
<tr>
<td><strong>Accountability</strong></td>
</tr>
<tr>
<td><strong>Productivity</strong></td>
</tr>
<tr>
<td><strong>Initiative</strong></td>
</tr>
<tr>
<td><strong>Grit</strong></td>
</tr>
</tbody>
</table>
According to a recent study by the Education Week Research Center, however, only 34 percent of teachers are integrating social emotional (aka EC Skills) learning into their classrooms, even minimally, even though 99 percent agree that social emotional learning increases student achievement, improves the school climate, and reduces school discipline problems (“Social and Emotional Learning,” 2015).

| Entrepreneurial (Thinking and Risk Taking) | Entrepreneurialism | Assertiveness,  
Dynamism, Innovation,  
Motivation, Persistence,  
Self-Confidence,  
Stress Tolerance  |
| Creativity & Imagination | Aestheticism,  
Creativity, Imagination,  
Inspiration, Individuality,  
Originality |
| Critical Thinking | Intuition,  
Conceptualization,  
Objectivity, Analysis,  
Perspective |
| Problem Solving | Creativity,  
Persistence,  
Rationality,  
Responsibility,  
Decision-Making |
| Curiosity & Inquisitiveness | Change, Engagement,  
Love of Learning,  
Perceptivity |

| Civic (Social and Collaborative) | Interpersonal Skills | Conflict Management,  
Relationship Management,  
Self-Awareness,  
Self-Management,  
Sociability,  
Social Awareness |
| Collaboration & Teamwork | Enriching Others,  
Relationship Management,  
Cooperation, Practicality,  
Supportiveness |
| Social Awareness | Empathy,  
Organizational Awareness,  
Service Orientation |
| Civic Literacy & Citizenship | Duty, Justice,  
Organizational Awareness,  
Rationality, Integrity |
| Social Responsibility & Action | Integrity,  
Responsibility,  
Empathy, Humanity,  
Service Orientation |

ONLY

34% OF TEACHERS ARE INTEGRATING SOCIAL EMOTIONAL LEARNING INTO THEIR CLASSROOMS

EVEN THOUGH

99% AGREE THAT SOCIAL EMOTIONAL LEARNING INCREASES STUDENT ACHIEVEMENT, IMPROVES THE SCHOOL CLIMATE, AND REDUCES SCHOOL DISCIPLINE PROBLEMS
Why Aren’t EC Skills Taught Today?

While the large majority of teachers want to integrate EC Skills into their curricula, many simply do not have the resources, training, or leeway from their superiors to do so. The fact that 84% of teachers surveyed want training on teaching EC Skills proves that they feel unprepared to make this shift (“Social and Emotional Learning,” 2015). A systemic change in educational priorities is needed—one that affirms the reality that EC Skills are equal in value to traditional academic content and should therefore be granted more attention in the classroom. Part of the resistance to this attitudinal change stems from educators. They understand that EC Skills are important for students, but are worried they may not be teachable, measurable, or possible to incorporate in a time-efficient manner.

The Pairin methodology addresses these concerns. When designing the methodology, Dr. Laughlin sought to discover a replicable model for how to most effectively design, implement, and measure the impact of integrated EC Skills instruction based on recommendations from experts in the field. Through research and testing, this methodology has proven effective in enabling students to develop the skills and attitudes necessary for success in school, the workplace, and life beyond.

Top Concerns Of Administrators and Teachers:

Are EC Skills teachable?

Are they possible to measure?

Will teaching EC Skills add time overall?
Part 2:
The Methodology
Part 2: **The Methodology**

A. **THE FOUR CORNERSTONES OF THE METHODOLOGY**

Dr. Laughlin’s EC skill-infused methodology for teachers leverages several specific practices already used by teachers and vetted by preexisting research validating their effectiveness. This methodology is unique due its strategic synthesis of proven practices which allow successful integration of content and EC skills together into a single unit of study. Here are the four research-based principles that form the cornerstones of Dr. Laughlin’s methodology.
1. Backwards Design

“Backwards design” is a crucial foundational element in the methodology which is based on the premise that, in order for learning objectives to be met, teachers need to begin by planning for these results and then designing learning experiences around them, rather than designing learning experiences first and hoping the results happen to follow. In backwards design, educators design instruction backwards from the intended outcomes, of both content and skills, first articulating the desired results, then the evidence of understanding, and finally the learning experiences which will allow students to achieve both EC skill and content learning. By planning what students should know and be able to do by the end of the unit, educators can facilitate the sort of student progress that they envision. Essential to the success of backwards design is consistent alignment among all phases of the teaching and learning process.

Ultimately, the backwards design framework is built upon a consensus of what researchers have found to be effective in teaching and learning, and it is therefore an essential component of this methodology.
2. Gradual Release of Responsibility

The next principle is the incorporation of the “gradual release of responsibility” framework, another research-based practice proven to guide students to understanding. In gradual release, a lesson progresses from whole class instruction with teacher modeling—where the teacher still fully “owns” the learning—through guided instruction and practice, and finally to independent practice. Throughout this process, responsibility for the learning is released to the students a little bit at a time, with the end goal of full student ownership of the learning.

Applying the gradual release model, Dr. Laughlin’s methodology calls for initial instruction of content and skills separately but then purposeful integration in the guided and independent practice stages.

This concept is illustrated in the figure below:

---

**Teacher Responsibility**

- Focused Instruction
- Guided Instruction
- Collaborative Learning
- Independent Learning

**Student Responsibility**

- “I do it”
- “We do it”
- “You do it together”
- “You do it alone”

(Adapted from Fisher & Frey, 2008)
3. Performance Assessment

Equally important to the success of content-skills integration is the strategic utilization of formative and summative performance assessments to track student progress. Performance assessments are those in which students display what they have learned in authentic contexts, through performances which require them to transfer what they have learned to a novel situation. After teaching and practicing both the content and skills, instructors formatively assess students to check on their progress. To assess both content and skills, teachers design a performance assessment task, designed to observe students’ EC skill development in the context of the content, thus linking the two assessments together. As students complete this performance task, the teacher observes and scores students’ behaviors using rubrics, which are aligned to the taught skills. The teacher can later assess the content through the final product created by students during the task.

When all content and skills have been taught, practiced, formatively assessed, and then re-taught if needed, it is time for the summative, or post-, assessment. Summative assessments come at the end of a unit and give a final measure of students’ understanding on the learning targets for the unit—in this case, both content and skills.

The process of designing and administering the summative performance assessment is very much like that of the formative assessments. Teachers design a different, more comprehensive performance task which again requires students to apply their skills in the context of the content.
4. Instructional Adjustments

Finally, the established practice of making “instructional adjustments” based on formative assessment data and teacher observations of classroom progress helps supplement and refine the learning process of both content and skills. After giving formative assessments, teachers analyze the data and offer targeted interventions to students who are still not demonstrating proficiency. Furthermore, formative assessment findings can warrant changes to the unit plan, such as adding in an extra day on the current topic or making sure the class circles back to review it. If applicable, daily conversations between teacher teams regarding student progress are also incredibly valuable for reaching a common understanding of which instructional activities are working and which are not.

Due to students’ varying levels of skill readiness and understanding of curricula, it is also important to use scaffolding and differentiated resources to best meet each pupil’s individual needs.

“...daily conversations between teacher teams regarding student progress are also incredibly valuable for reaching a common understanding of which instructional activities are working and which are not.”
Part 2: The Methodology

B. THE 6(+1) STEP METHODOLOGY

Dr. Laughlin’s integration methodology, while based on the complex pedagogical practices discussed on previous pages, can be simplified down into a 6 (+1) step process for teachers to follow.
The Methodology Behind Integrating Essential College and Career Skills Into Everyday Curricula

Step 1: IDENTIFY

Teachers begin the process by using their standards and/or curriculum maps to identify which content to teach in an upcoming unit of instruction. They then consider school and district goals as well as personal classroom observations to identify relevant skills which will pair well with the chosen content.

Step 2: PRE-ASSESS

Teachers formally and/or informally pre-assess students’ understanding and demonstration of the content and the skills. Pre-assessments of content and skills are conducted separately.

Step 3: PLAN

Using their formal and/or informal pre-assessment data, teachers design a content-skills integrated unit of instruction, following the backwards design framework. In this unit plan, teachers purposefully pair and sequence content and skills and identify points at which formative assessment should occur.

Step 4: TEACH

Teachers provide initial instruction on one paired content idea and skill. These two lessons occur separately, not simultaneously. This might mean a lesson on Plot and a lesson on Self-Control. To simplify this process for teachers, Pairin offers ready-made lessons on all EC skills.

Step 5: PRACTICE

After separate initial instruction in the content and skill, teachers assign a task for students in which the content and skill can be practiced in tandem.

Step 6: ASSESS

Teachers give a formative performance assessment to assess students’ understanding of both the taught content and skill. Rubrics are used to compare student performance of the skill against a descriptor of proficiency. Content is scored according to established school or district grading practices.

(+1): REPEAT AS NEEDED

These six steps can be repeated as many times as necessary, for each new content idea and skill, until a summative performance assessment, incorporating all taught content and skills, is given at the end of a unit. An alternate, simpler pathway for teachers to follow would be to repeatedly incorporate a single skill into multiple, different content ideas over the course of a unit.
Part 3:
Results and Discussion
Part 3: Results and Discussion

The quantitative results of Dr. Laughlin’s study show student gains on every single learning target for the unit, for both content and skills, ranging from average gains of approximately 0.5 points to over 2 points on a 4-point rubric scale. The collective population of student participants in the study (~250) averaged a score of 3 or higher, indicating proficiency, on all 22 skills taught.

(Note: Although Dr. Laughlin’s original study tested students on a set of 22 skills articulated by EdLeader21, differing slightly from the 20 EC Skills formulated by Project: BeReady, all rubrics, exercises, lessons and modules currently provided are aligned with Pairin’s EC Skills.)

<table>
<thead>
<tr>
<th>4Cs</th>
<th>Sub-Skill</th>
<th>Pre-Assessment</th>
<th>Post-Assessment</th>
<th>Mean Gain (Pre- to Post-)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean (out of 4)</td>
<td>Mean (out of 4)</td>
<td>s.d.</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Leadership &amp; Initiative</td>
<td>2.74</td>
<td>3.40</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>Cooperation</td>
<td>2.40</td>
<td>3.32</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Flexibility</td>
<td>2.62</td>
<td>3.41</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>Responsibility &amp; Productivity</td>
<td>2.70</td>
<td>3.35</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Responsiveness</td>
<td>2.62</td>
<td>3.33</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Reflection</td>
<td>2.17</td>
<td>3.61</td>
<td>1.02</td>
</tr>
<tr>
<td>Communication</td>
<td>Engaging in Discussions</td>
<td>2.60</td>
<td>3.37</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Listening</td>
<td>2.49</td>
<td>3.36</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>Delivering Oral Presentations</td>
<td>2.31</td>
<td>3.15</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>Reflection</td>
<td>2.26</td>
<td>3.65</td>
<td>0.98</td>
</tr>
<tr>
<td>Creativity</td>
<td>Idea Generation</td>
<td>2.49</td>
<td>3.08</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>Idea Design &amp; Refinement</td>
<td>2.40</td>
<td>3.18</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Openness &amp; Courage to Explore</td>
<td>2.57</td>
<td>3.31</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Work Creatively With Others</td>
<td>2.74</td>
<td>3.49</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Creative Production &amp; Innovation</td>
<td>2.27</td>
<td>3.55</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td>Reflection</td>
<td>2.04</td>
<td>3.64</td>
<td>0.88</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Information &amp; Discovery</td>
<td>2.48</td>
<td>3.04</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>Interpretation &amp; Analysis</td>
<td>2.23</td>
<td>3.14</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>Reasoning</td>
<td>2.07</td>
<td>3.09</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>Problem Solving/Solution Finding</td>
<td>2.37</td>
<td>3.06</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Constructing Arguments</td>
<td>2.27</td>
<td>3.12</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>Reflection</td>
<td>1.88</td>
<td>3.52</td>
<td>0.93</td>
</tr>
</tbody>
</table>
Students also made significant gains in their understanding of the content. On these measures, the results are similarly impressive to the EC skill learning, demonstrating students made gains in all measured areas.

**Mean Pre- and Post-Assessment Scores: Content**

<table>
<thead>
<tr>
<th>Content: Story Elements</th>
<th>Pre-Assessment</th>
<th>Post-Assessment</th>
<th>Mean Gain (Pre- to Post-)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (out of 4)</td>
<td>s.d.</td>
<td>Mean (out of 4)</td>
</tr>
<tr>
<td>Plot</td>
<td>1.76</td>
<td>0.71</td>
<td>3.11</td>
</tr>
<tr>
<td>Theme</td>
<td>1.03</td>
<td>0.16</td>
<td>3.31</td>
</tr>
<tr>
<td>Conflict</td>
<td>1.06</td>
<td>0.24</td>
<td>3.08</td>
</tr>
<tr>
<td>Purpose</td>
<td>1.41</td>
<td>0.53</td>
<td>2.98</td>
</tr>
<tr>
<td>Point of View</td>
<td>1.31</td>
<td>0.56</td>
<td>3.04</td>
</tr>
<tr>
<td>Characters’ Response</td>
<td>2.54</td>
<td>0.74</td>
<td>3.46</td>
</tr>
</tbody>
</table>

Students’ overall success in both the content and skills indicates that integration was likely an important factor in the achievement of such impressive results. In light of the increasingly apparent benefit of integrating EC skills into the classroom, it is essential that educators are given guidance on how to begin. This study posits several implications for other educators looking to implement Dr. Laughlin’s integration methodology:

1. Content-skills integration is possible.
2. Proficiency in both content and skills can be achieved through integration.
3. Teachers looking to integrate EC skills must be willing to take the time to build background knowledge in effective methods of skills instruction and assessment.
4. Backwards design works well for integration, allowing for development of understanding in both skills and content.
5. Teacher collaboration can enhance the design and implementation of an integrated unit.
6. Teachers should think through the potential challenges students will experience with the content and skills in order to plan for differentiation and develop appropriate scaffolds.
7. It is important to consider how skills will be assessed. Good rubrics and performance tasks are essential.
8. Teachers should anticipate the need for a systematic plan for intervention in both content and skills.
Part 4:
Implementation
Recommendations
Part 4: Implementation Recommendations

It should be anticipated that understanding and implementing this methodology is a process, one which will require teachers to make some mental shifts. It should therefore be implemented in manageable stages to allow for maximum learning and effect. One suggested method for implementation is outlined here.

**STAGE 1**
INDEPENDENT TEACHERS

**STAGE 2**
TEACHING TEAMS (INTERDISCIPLINARY + CONTENT)

**STAGE 3**
SCHOOL-WIDE (SKILLS BASED ON DEPARTMENTS)

**STAGE 4**
DISTRICT-WIDE
Part 5:

Putting Fears to Rest
Part 5: **Putting Fears to Rest**

One prevalent apprehension on teaching EC skills is that teachers do not have time to add anything else to the growing list of what must be accomplished in a single school year. In our current educational climate, emphasis is placed on results from high-stakes testing, exacerbated by the fact that in 41 states, teachers are now being evaluated—at least in part—based on their students’ test scores (Doherty & Jacobs, 2013). Teachers fear that adding anything new into the curriculum might negatively impact test results, and in a more general sense, make their jobs even more difficult. However, the quantitative results from this study indicate that through the integration model presented here, student proficiency in tested content does not suffer, but in fact most often improves. At the same time they are learning content, students can simultaneously be developing essential skills that support and help them in mastering that content.

This synergistic effect is of benefit to both the student, the teacher, and ultimately employers. When interviewed about their experience with this methodology, teachers involved in Dr. Laughlin’s study stated that teaching EC skills saves, rather than adds, time in the long run. They also noted that explicitly addressing EC skills leads to improvements among students in cooperation and overall classroom behavior, as well as in other traits that contribute to a smoother and more efficient class on a daily basis. Certainly, the teachers indicated, focusing on EC skills requires investing some time up front, but doing so results in students whose enhanced ability to understand content creates less need for re-teaching, thus creating a net increase in available time.

In addition, the teachers indicated that while there was a learning period for EC skill instruction, it quickly became an intuitive and essential component of their classroom repertoire. The rewards of incorporating EC skills into the classroom, in other words, swiftly reach a critical mass - what Malcolm Gladwell has coined as a “tipping point” - occur when the benefits equal and begin to surpass the teacher’s time and effort investment. The gains students made throughout this study demonstrate that learning and then applying EC skills in the context of traditional academic content allows for significant gains to occur in both areas.

“The rewards of incorporating EC skills into the classroom, in other words, swiftly reach a critical mass - what Malcolm Gladwell has coined as a “tipping point” - occur when the benefits equal and begin to surpass the teacher’s time and effort investment.”
Part 6: Conclusion

For years, effective teachers have utilized many of the practices incorporated into this model, such as backwards design, the gradual release of responsibility, and performance assessment. However, as the saying goes, “The whole is greater than the sum of its parts.” In Dr. Laughlin’s methodology, these practices are strategically combined together to integrate EC Skills into the curriculum, resulting in greater student success.

Although teachers unfamiliar with EC Skill instruction may be concerned about the teachability, measurability, and time efficiency of such a change in their method of instruction, all of the available evidence suggests that integrating EC Skills into the classroom is an incredibly worthwhile decision that exceeds expectations in all three criteria. Students who are effectively taught EC Skills see improvement in a range of areas beyond just test results, including in classroom attendance, ability to focus, and enthusiasm for learning simply for its own sake.

Ultimately, we have an obligation to ensure that today’s students are prepared for college and the changing job market. Integrating EC Skills into the classroom will be an essential part of meeting this goal, and Dr. Laughlin’s methodology provides a tested blueprint for doing so. Amidst a shifting educational landscape, a system that emphasizes both skills and content has the potential to exert a lasting positive impact for years to come.
Part 7:

References
Part 7: References


