Technology for Transition: A 21st-Century Curriculum for Students With Disabilities

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21st Century Skills Defined

The skills students need to succeed in the 21st Century:

• Life and Career Skills
• Learning and Innovation Skills
• Information, Media, and Technology Skills
• Core Subjects with 21st Century Themes

(Partnership for 21st Century Skills, www.21stcenturyskills.org)
College & Career Readiness

- Students who demonstrate College and Career Readiness skills are able to:
  - employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use
  - tailor online searches to acquire useful information
  - identify strengths and limitations of technological tools and mediums
  - select and use technology best suited to their communication goals
21st Century Curricula

EnvisionIT and E-Mentoring Curricula

• Teach IT skills
• Help students build a self-directed Transition Portfolio
• Match students’ interests, abilities, and personality to career goals
• Align with Common Core Standards (CCS)
• Incorporate Universal Design for Learning (UDL) concepts
What is Electronic Mentoring?

• Uses technology to connect mentors and mentees through the email
• Email prompts provided in curricula
• Allows mentors and mentees to communicate weekly through:
  • Small Group listserv
  • One-to-one e-mail
21st Century Curricula
College and Career Readiness

Common Core Standards & College and Career Readiness

Information Technology & Computer Literacy

Transition Assessment & Self-Directed Planning

Nisonger Center
Sample IT Objectives in Curricula

Information Technology Objectives

1. Use rules for communicating online by sending/receiving email.

2. Retrieve information from the Internet.

3. Determine meaning of vocabulary words using online dictionary.
Sample Transition Objectives

1. Complete three online self-assessments to identify preferred learning styles, personality traits, and career interests

2. Create PowerPoint slides that describe two preferred personality traits

3. Compare four career choices that match your personality traits

4. Summarize key point in a college preparation chart such as: majors, application process, finances, student activities, campus visits and surrounding areas
Core Standards and Transition Assessment

Princeton Review: After completing the Princeton Review students will be able to analyze their Interest Color and list 4 occupations to explore.

Core Standard:

Reading Strand: Reading for Information 2
Determine two or more central ideas of a text and analyze their development, including how they interact and build upon one another to provide a complex analysis.
Core Standards and Transition Assessment

-Transition Portfolio, Activity 1a: Self Assessment: VARK -
  After completing the VARK students will be able to analyze their
  learning style and share strategies that enhance their learning

-Common Core Standards

  • **Reading Strand: Reading for Information 2**, Determine two or
    more central ideas of a text and analyze their development,
    including how they interact and build upon one another to provide a
    complex analysis.
  
  • **Writing Strand 2e**, Use precise language, domain-specific
    vocabulary, and techniques such as metaphor, simile, and analogy
    to manage the complexity of the topic.
  
  • Use technology, including the Internet, to produce, publish, and
    update individual or shared writing products in response to ongoing
    feedback.
Core Standards and Transition Assessment

Students will be able to email their mentors and attach a PowerPoint describing their Princeton Review and VARK results

-Common Core Standards
  - **Writing Strand 4**, Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
  - **Speaking and Listening Strand 2 & 5**, Integrate multiple sources of information presented in diverse formats and media.
Core Standards and Transition Planning

- Transition Portfolio, Unit 10
  • Activity 2: Setting Annual Goals and Short-Term Objectives

- Common Core Standards
  • **Reading Strand: Reading for Information 3**, Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
  • **Language Strand 1**, Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
Transition Portfolio

Students create a Transition Portfolio that includes:
1. PowerPoint Presentation
2. Job or College Comparison Chart
3. Resume
4. Cover Letter
5. Career Narrative
6. Job or College Application
7. Interview with a Professional
8. Job or College Checklist
9. Bookmarks of websites visited in career search
Transition Portfolio PowerPoint

Students include:

• Results of online assessments:
  • VARK, Princeton Review, Myers-Briggs Personality Assessment
    – Results of Internet Research on two – four careers of interest

• Postsecondary goals
  – Education/Training
  – Employment
  – Independent Living
Age Appropriate Transition Assessments

- Develop realistic and meaningful goals
- Assist develop IEP postsecondary goals
- Provide information for present levels of performance
- Learn about the individual student, his/her strengths, needs, ambitions, interests, preferences
- Connect IEP with future plans
- Inform the Summary of Performance
E-Mentoring Sample: Unit 10, Section 4

10.4 Unit 10: Your Career Plans

It looks like your Transition Portfolio is filling up with great information about you.

So far you have learned about:
- your learning style and personality;
- the skills you currently have and ones you’d like to work on;
- the postsecondary career that matches your abilities and interests.

Now, take another look at your measurable postsecondary goals. Do you need to revise them? If you did change your goals, are there other steps you need to take to plan your future?

Take the time to e-mail your mentors now!
- Ask them for a tip about setting goals.

Use your Gaggle e-mail:
http://www.gaggle.net
EnvisionIT Pilot Sites 2007-10

- Ohio State School for the Blind (OSSB)
- One Career Tech High School

Randomized by School:
- One large urban district: three high schools
- Four suburban districts: eight high schools
- Four rural districts: four high schools
- Ideal implementation at OSSB – integrated across 9 – 12th grades!
Methods: Setting & Participants

• 15 high schools randomly assigned stratified by SES
  • 7 experimental schools
  • 8 control schools
• Inclusive and Resource Room/Direct Instruction Classrooms
• English/Language Arts Classrooms & Technology Classrooms
• Year 1 N=287, Year 2 N=268
# EnvisionIT Year 1 Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental (N=153)</th>
<th>Control (N=134)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School Setting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td>17%</td>
<td>25%</td>
</tr>
<tr>
<td>Rural</td>
<td>83%</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>56%</td>
<td>55%</td>
</tr>
<tr>
<td>Female</td>
<td>44%</td>
<td>45%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>93%</td>
<td>82%</td>
</tr>
<tr>
<td>African-American</td>
<td>3%</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Classroom Setting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Room</td>
<td>34%</td>
<td>47%</td>
</tr>
<tr>
<td>Inclusive</td>
<td>66%</td>
<td>53%</td>
</tr>
<tr>
<td><strong>Disability Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Disability</td>
<td>59%</td>
<td>57%</td>
</tr>
<tr>
<td>Disability</td>
<td>41%</td>
<td>43%</td>
</tr>
<tr>
<td><strong>Reading Ability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benchmark</td>
<td>32%</td>
<td>22%</td>
</tr>
<tr>
<td>Strategic Intervention</td>
<td>35%</td>
<td>47%</td>
</tr>
<tr>
<td>Intensive Intervention</td>
<td>33%</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Grade Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9th Grade</td>
<td>65%</td>
<td>25%</td>
</tr>
<tr>
<td>10th-12th Grades</td>
<td>35%</td>
<td>75%</td>
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</table>
EnvisionIT Results (N=287)

Transition:
- 61% of experimental students who were undecided at pretest had a career goal posttest.
- Only 5% of experimental students who had a career goal pretest reported being undecided posttest compared to 13% of control students.

Information Literacy Results:
- Experimental students performed significantly better on the IT Literacy posttest compared to control students
  - \( F = 10.99 \) (272), p=.001.
Results for 2007-08 (N=287)
Experimental: n=153
Control: n=134
-Statistical significance (p < .05) for all categories except
- SwD and AIMS Intensive

Raw data gains suggests that EnvisionIT increased IT literacy

Transition Gains Made through the EnvisionIT Curriculum*

Knowledge of Finding Jobs

- Experimental students with and without disabilities had significant gains in knowledge in finding jobs post-test compared to control students.

Finding information about colleges

- Experimental students with disabilities had greater gains in reported ability to find college information, compared to control students with disabilities.

Pre-Post Mean Increase by Group
Goal Setting, Finding Jobs & College Info

Results for 2007-08 (N=287)
Experimental (n=153)
Control (n=134)
Statistical Significance (p=.05)
• Goal setting for SwD
• Knowledge of finding jobs for Swd and SwoD,
• Knowledge of finding college info for SwD

Izzo et al. 2010, CDEI 33(2)
Pre-Post Reading Results of Students with HI or LD using AIMSWeb Assessment
## 2010-11 E-Mentoring Descriptive Characteristics by Group (N=120)

<table>
<thead>
<tr>
<th></th>
<th>EXP (n=38)</th>
<th>CONT (n=82)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent with Disabilities</td>
<td>31.58</td>
<td>28.05</td>
</tr>
<tr>
<td>Percent without Disabilities</td>
<td>68.42</td>
<td>71.95</td>
</tr>
<tr>
<td>Percent Male</td>
<td>44.74</td>
<td>47.56</td>
</tr>
<tr>
<td>Percent Female</td>
<td>55.26</td>
<td>52.44</td>
</tr>
<tr>
<td>Percent African American</td>
<td>44.74</td>
<td>46.34</td>
</tr>
<tr>
<td>Percent Caucasian</td>
<td>50.00</td>
<td>43.90</td>
</tr>
<tr>
<td>Percent Hispanic</td>
<td>2.63</td>
<td>3.66</td>
</tr>
<tr>
<td>Percent Asian American</td>
<td>0.00</td>
<td>1.22</td>
</tr>
<tr>
<td>Percent Other</td>
<td>2.63</td>
<td>4.88</td>
</tr>
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</table>

**Conclusion:** Though CONT group is twice as big as EXP group, the groups are proportionately balanced in their composition.
Conclusion: Experimental group increased IT Literacy significantly compared to control group.
Conclusion: Students in the experimental group increased their performance significantly on the Transition Knowledge test, as compared to the control group.
2010-2011
AIMS Web Reading Gains (N=120)

Conclusion: Intervention helps students with disabilities in reading as measured by their AIMS web score.
For EXP group change in AIM score was similar between students with and without disabilities.
For CONTROL group change in AIM score was much worse for students with disabilities.
2011-2012 Pilot Schools

- Large urban district in inclusive classes
- Virtual state charter school
- School for students with ASD
- Core standards addressed
- Final revisions to curriculum
Transition Planning for Students with Autism

Data from NLTS2 indicates

- Only 22% of students with ASD had transition plans that included postsecondary vocational training as a goal.
- Only 23% of students with ASD had transition plans that included the goal of attending a two- or four-year college.

Migliore & Lugas, 2011
Transition Planning for Students with Autism

• Yet, 39% of students with ASD who did not have a goal of postsecondary vocational training went on to attend postsecondary education

• Similarly, 30% of students with ASD who did not have a goal of attending a two- or four-year college went on to attend postsecondary education

Migliore & Lugas, 2011
Transition Planning for Students with Autism

• Do these data indicate lowered expectations of postsecondary outcomes of students with ASD?

• Would more students with ASD attend a postsecondary educational setting if they had been encouraged to explore this opportunity when they were in high school?

Migliore & Lugas, 2011
Haugland Learning Center

• Columbus-based school for students with Asperger Syndrome, Autism, and other developmental disabilities in the state of Ohio
• The main purpose of HLC is to provide a safe, appropriate learning environment for students with developmental disabilities
• Students are placed based on ability level and are provided with small-group instruction from highly trained teachers
• Applied behavior analysis approach
The curriculum was implemented in the high school classrooms of the ASPIRE division of HLC.

Students in this group were in grades 9-12 and typically had primary diagnoses of Asperger Syndrome.

Students are taught in low student-teacher ratios and are provided explicit instruction in social skills, adaptive behavior, and other traditional academic areas.

The typical high school class had 6-8 students which allowed for more in-depth instruction.
Assistive and Universal Technology

- Many students with ASD are hypersensitive to external stimuli
- In addition, students with ASD may display higher rates of off-task behavior during instruction
- Literature indicates the usage of eText technology increases comprehension for students with LD and ID
- The current SSD investigated the effects of eText on the on-task behavior, reading comprehension, and learning gains of high school students with ASD within the E-Mentoring curriculum
SSD Method

• Alternating treatment design
  – Baseline
  – Intervention: usage of eText during lessons

• 4 participants

• Dependent variables
  – Reading comprehension through CBM
  – Learning gains through CBM
  – On-task behavior- data were using a whole-interval recording method
### Fidelity & IOA

<table>
<thead>
<tr>
<th>Variable</th>
<th>% of sessions IOA data were collected</th>
<th>% agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-task behavior</td>
<td>30%</td>
<td>87%</td>
</tr>
<tr>
<td>Learning gains (permanent product)</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Reading comprehension (permanent product)</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Treatment fidelity</td>
<td>30%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Participant 4

Session

% On-Task

1  2  3  4  5  6  7  8  9  10  11
Reading Comprehension & Learning Gains

• Functional relation between eText and Reading Comprehension and Learning Measures was not evident
  – Could be because students did not need eText for this purpose
Discussion

• Overall, eText did increase the on-task behavior of all 4 participants
• The participants that benefited from the intervention the most were the participants that displayed the highest levels of off-task behavior
The students involved in the curriculum were very unsure about future plans at the start of the program. Many of them had no idea what they wanted to do and those who had an idea of their post-secondary goals often had no idea how to make them a reality. The curriculum provided students with access to this knowledge and support to understand it. By the end, all of my students had an idea of what their post-secondary goals were and steps they needed to take to achieve these goals.
“Learning about my personal strengths and goals really helped me choose a future career. The curriculum helped me realize I want to teach little kids and it taught me how to get there. Before this I had no idea what to do or how to even apply to college! This has helped a lot.”
“I knew that I wanted a career working with computers after high school, but I didn’t know what my options were. I also didn’t know where I could go to school for this or how long. The E-Mentoring curriculum helped me figure this stuff out. Now, I know where I will apply next year.”
Teacher’s Review of the Class

“This course was incredibly helpful for my students; it helped them look into the future to set meaningful post-secondary goals. Then, it went further by providing mentors to guide each student. Upon completion of the program my students knew how to create a resume, had filled out a sample application to college, and had a strong idea of their future career goals. The students were excited to do the curriculum and were very enthused about the opportunity to communicate with mentors. This was an excellent way for students to learn about the future in a safe, supported way.
Student Quotes about E-Mentoring Across Project Years:

• “I like having a mentor who understands me.”
• “My mentor gave me motivation, I learned about college.”
• “We taught each other things.”
• “It is helpful to be encouraged.”
• “My mentor gives me helpful feedback on my coursework.”
Mentor Quotes about E-Mentoring

• “Being blind growing up, without any blind/VI mentors around, I really felt like I wanted to contribute in some way. I think this program is great and I hope it continues.”
• “The mentor role is rewarding.”
• “Teachers are reporting gains in student progress in school and other areas.”
Student Comments:

• “Before E-Mentoring, I had no idea what I wanted to do, I was interested in so many different things. It helped me decide what careers best suited my skills.”

• “E-Mentoring allows me to have some flexibility to change my mind in the future.”

• “Before I wasn’t searching the Internet in the right way, but E-Mentoring taught me how to search differently.”
Discussion

• EnvisionIT and E-Mentoring curricula makes a positive difference in the lives of students with and without disabilities.

• Project utilized experimental pretest-posttest design in school settings. Challenges:
  – Student engagement
  – Teacher fidelity
  – Randomization
  – School context

• Learning supports are essential as is teacher-led instruction in gaining positive results for students.
Stepping-Up EnvisionIT

• We just won another OSEP grant to scale-up EnvisionIT – 5-year project beginning on 10/01/12 – will include curriculum revision, national piloting, and broad dissemination through organizational and school partnerships.

• Will partner with the National Secondary Transition Technical Assistance Center (NSTTAC), the National Association of State Directors of Special Education (NASDSE), and the Association of University Centers on Disabilities (AUCD).

• Will pilot with 700 students with disabilities across 12 high schools, including at least 8 schools from different states.

• Year 1 piloting occurring in select Columbus high schools.

• We need additional Ohio high schools to pilot EnvisionIT starting in Year 2. Schools will hopefully sustain EnvisionIT. If interested, please see us after presentation or contact Margo Izzo.
Additional Resources

- Nisonger Center: [www.nisonger.osu.edu](http://www.nisonger.osu.edu)
- NSTTAC: [www.nsttac.org](http://www.nsttac.org)
- DCDT: [www.dcdt.org](http://www.dcdt.org)
- Zarrow Center for Learning Enrichment: [www.ou.edu/content/education/centers-and-partnerships/zarrow.html](http://www.ou.edu/content/education/centers-and-partnerships/zarrow.html)