

# *Technology Centers*

## *That Work: Site Development Workshop*

### *Developing a School Improvement Plan*

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# Site Development Workshop Objectives

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- Awareness and understanding of goals and key practices
- Determine status of Technology Center and classroom practices
- Develop actions for closing the knowing and doing gap
- Develop actions for increasing collaboration with feeder high schools
- Develop a structure for planning and managing the implementation of the *HSTW* design for Technology Centers



## Background to *Technology Centers That Work*

- Origin of *HSTW*
- Effort-based school improvement (**Responsibility**)
- Rigorous academic and quality CT curriculum (**Rigor and Relevance**)
- Supportive **Relationship** between students and Adults
- Setting personal goals with a plan to achieve (**Focused**)
- Continuous improvement (**Reflection**)
- Supportive **Conditions**

# Work Harder to Get Smarter:

**We need to change our thinking and our language from an ability model to an effort model.**

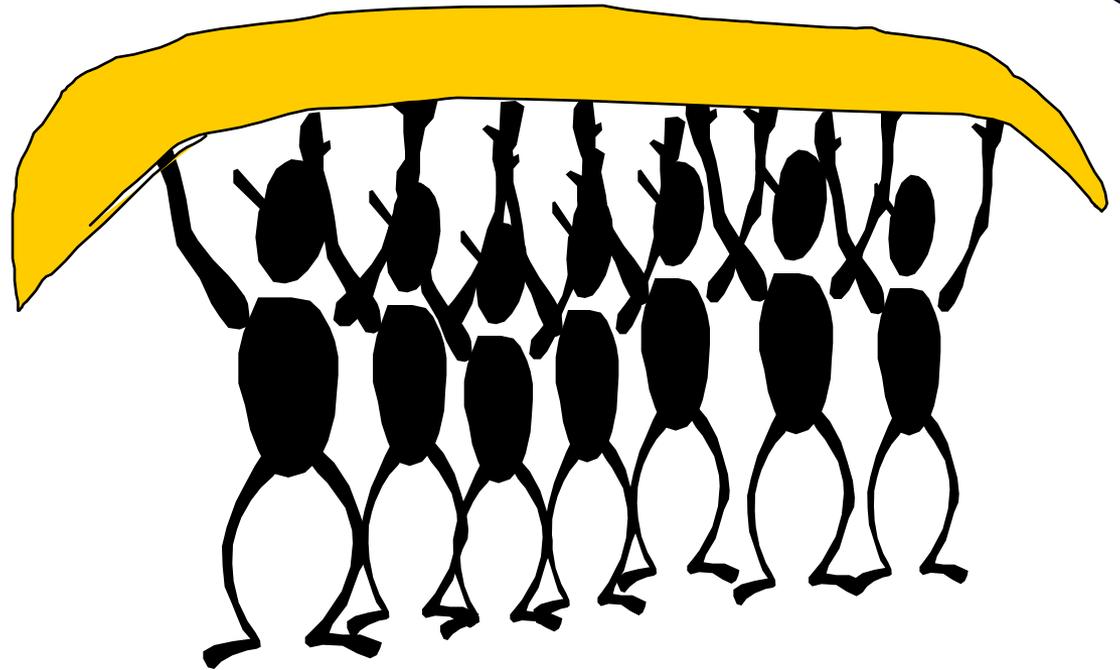
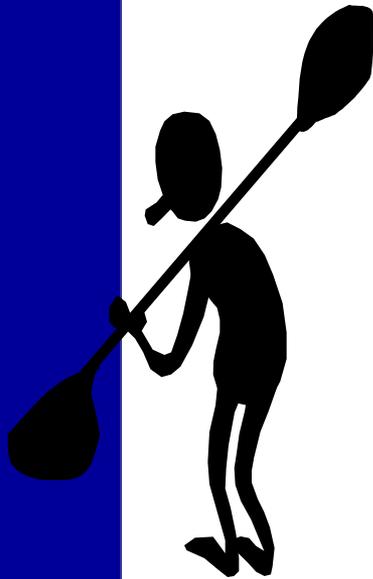
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# The Story of being a School Leader...

## *“The Race”*

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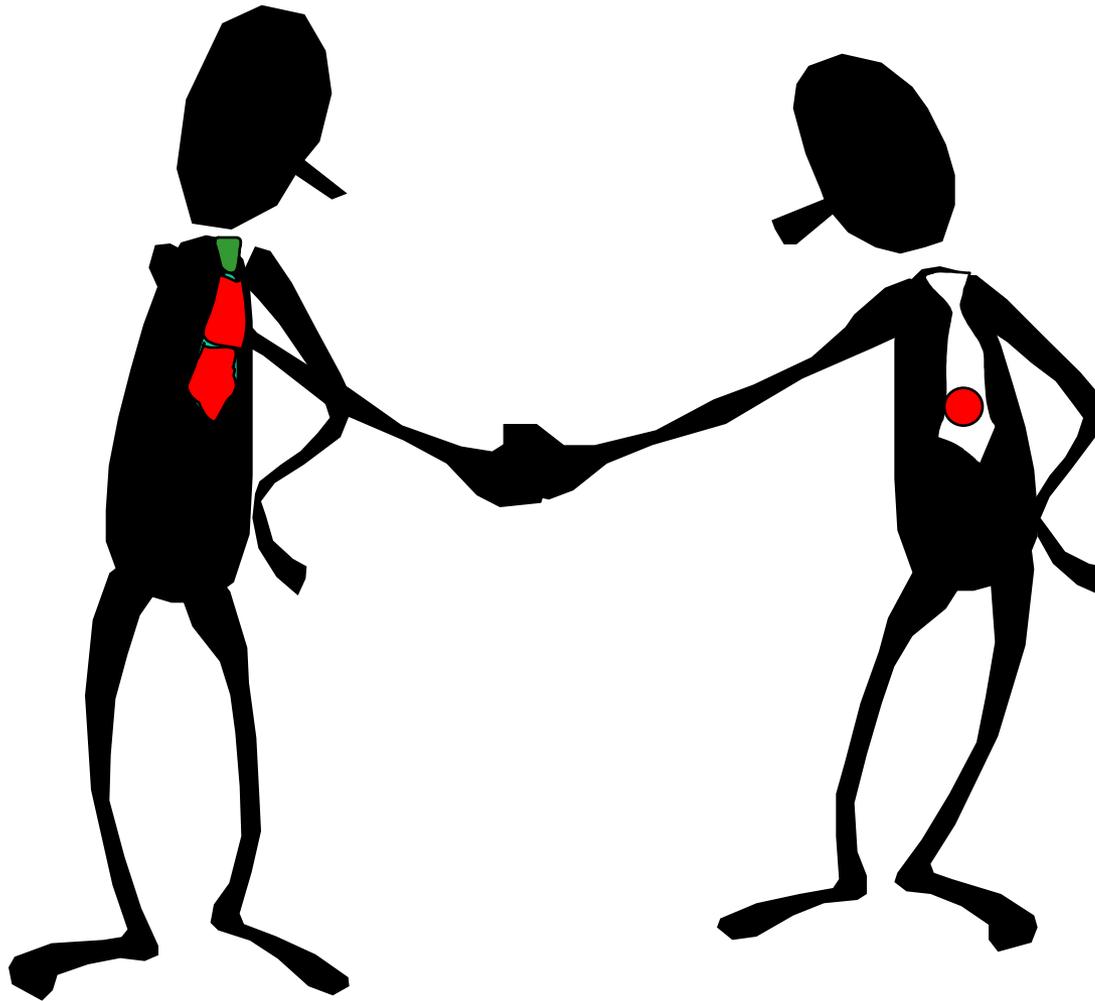
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Once upon a time there was a Timbuktu rowing team

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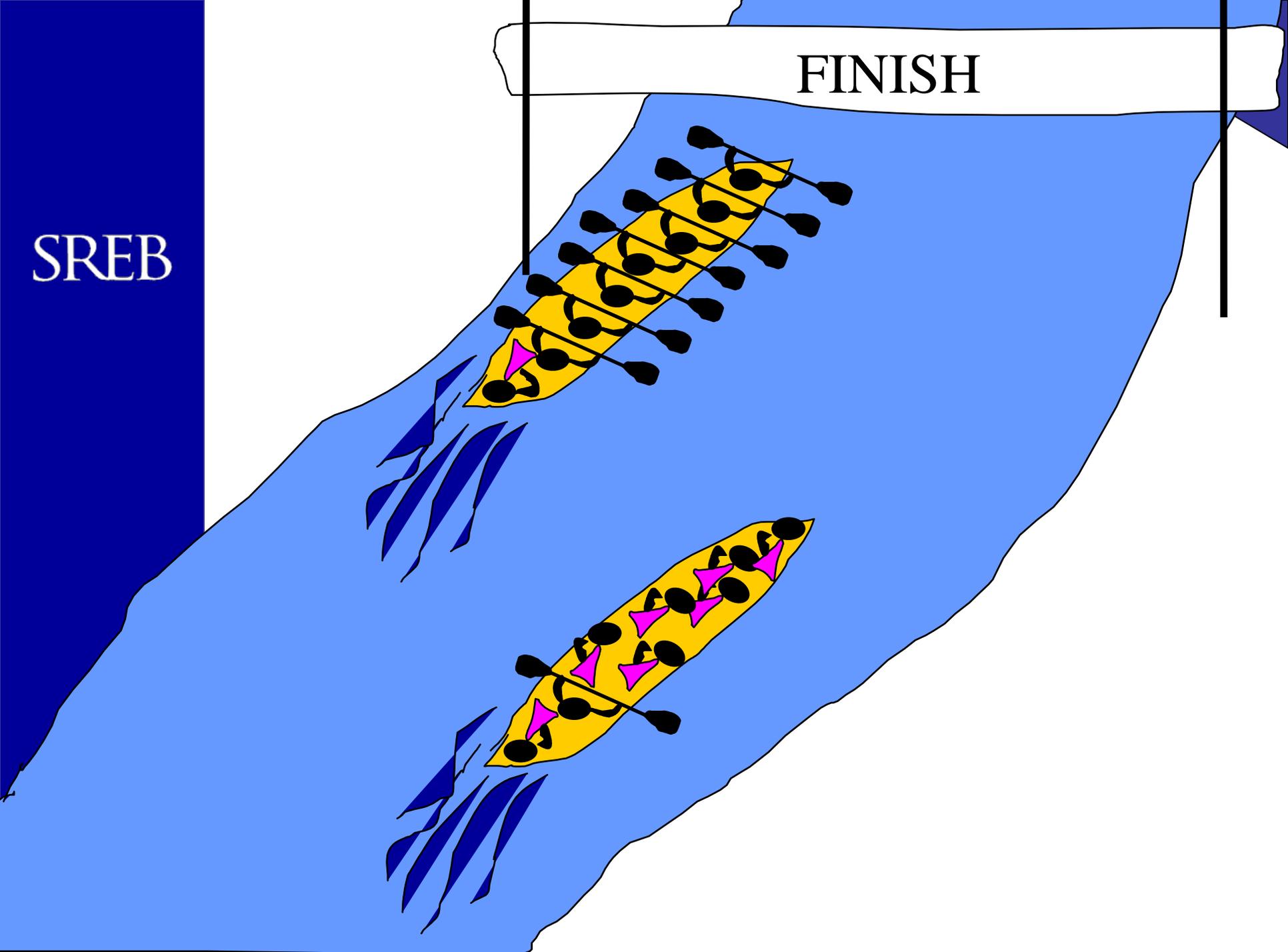


**Timbuktu and Japan agreed to hold an annual rowing race. Each team should contain 8 men.**

**Both teams worked really hard to get in the best shape. On the day of the first race, both teams were in similar condition. The Japanese team won by 1 mile.**

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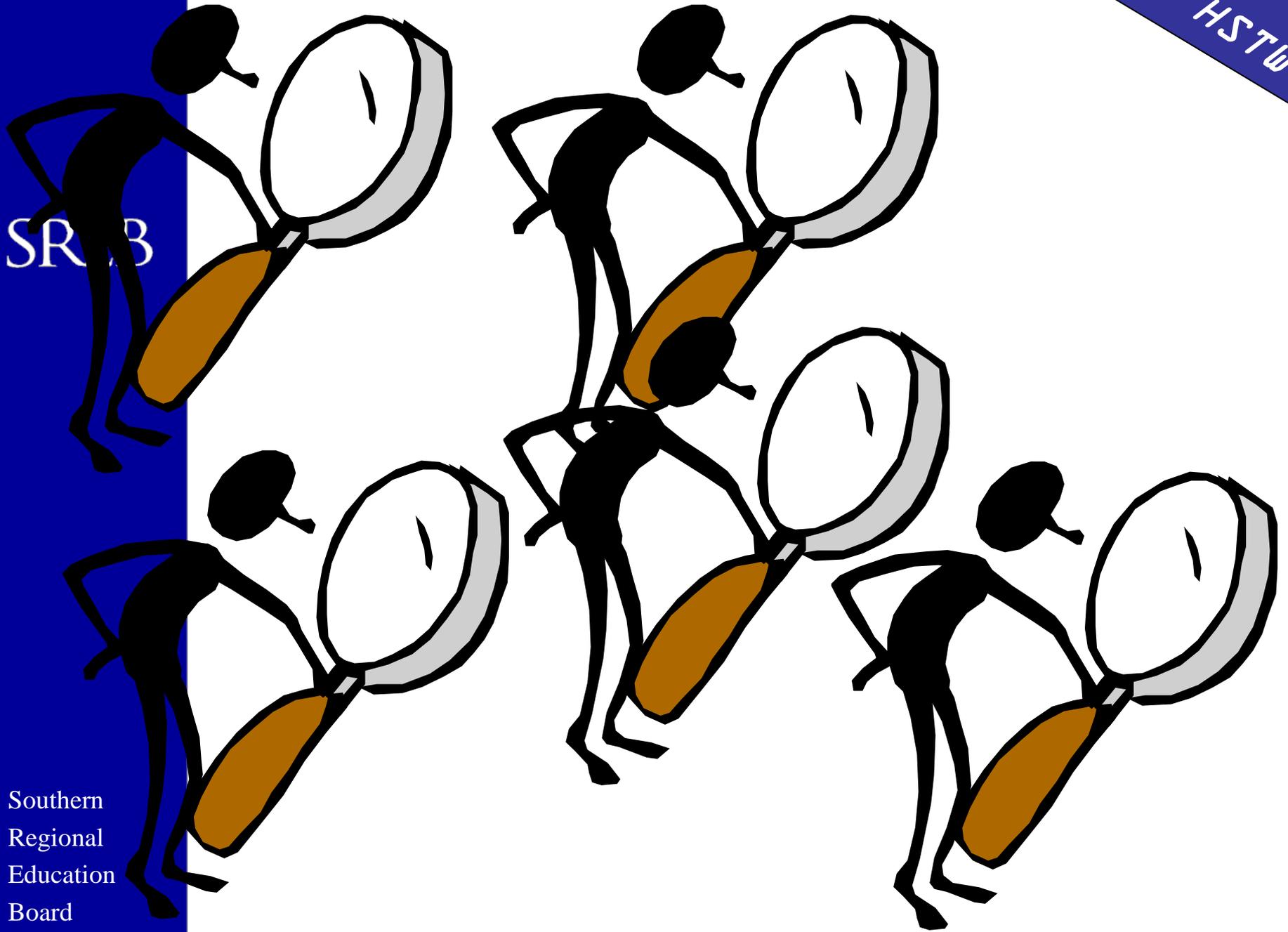
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**The mood in the Timbuktu team was really close to freezing point. The top management decided to win the race next year. So they established a team of analysts to observe the situation and recommend an appropriate solution.**

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**After several weeks of detailed analysis, the team found out that the Japanese had 7 rowers and only one captain.**

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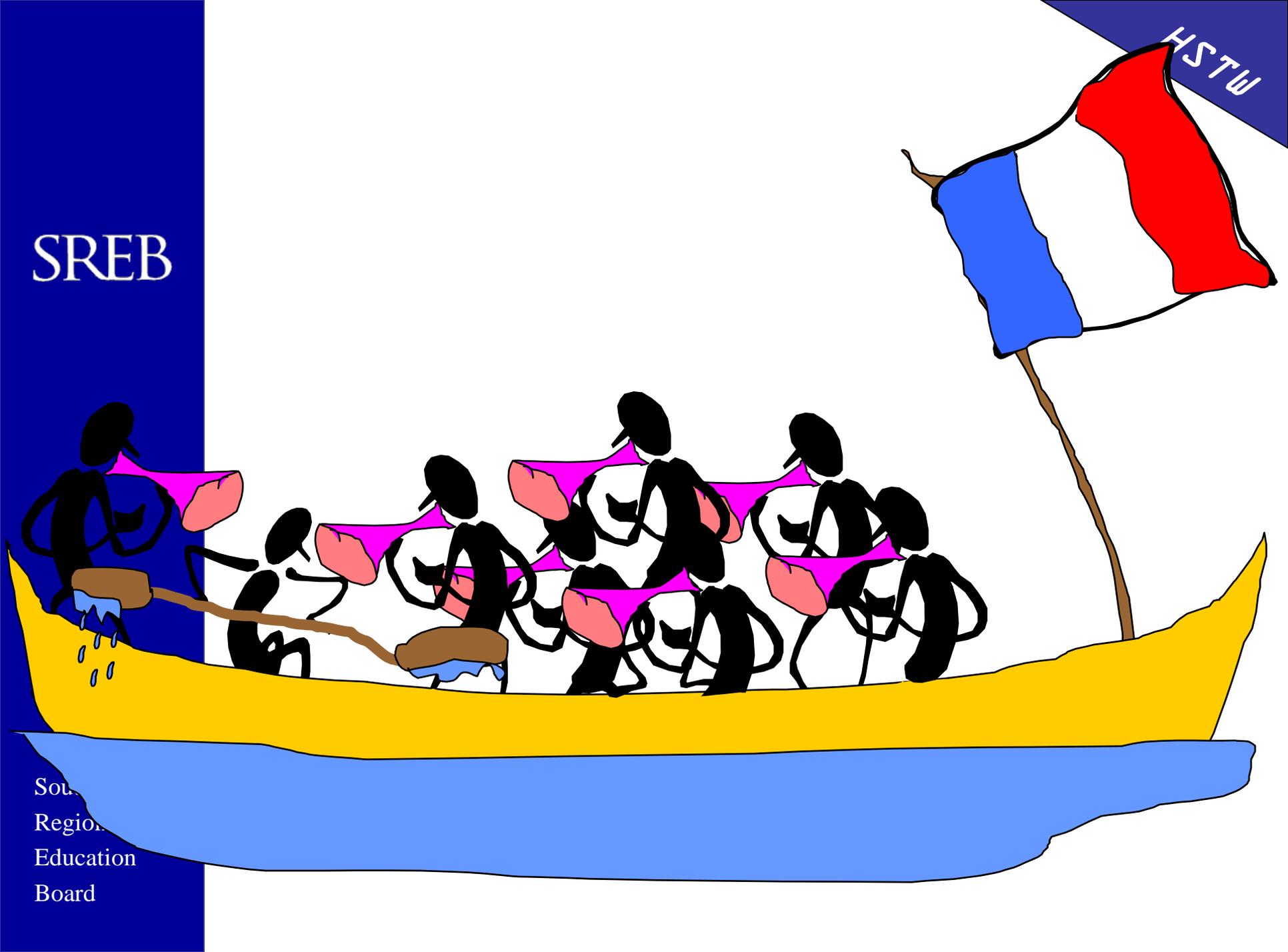
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**And the Timbuktu team  
had 7 captains and  
only one rower.**

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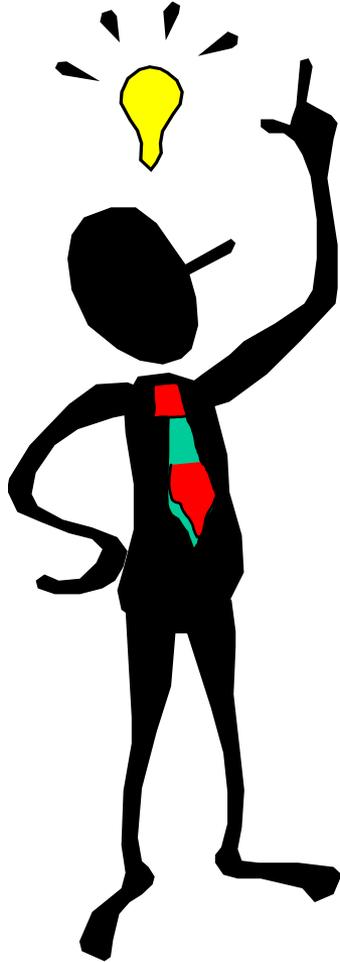
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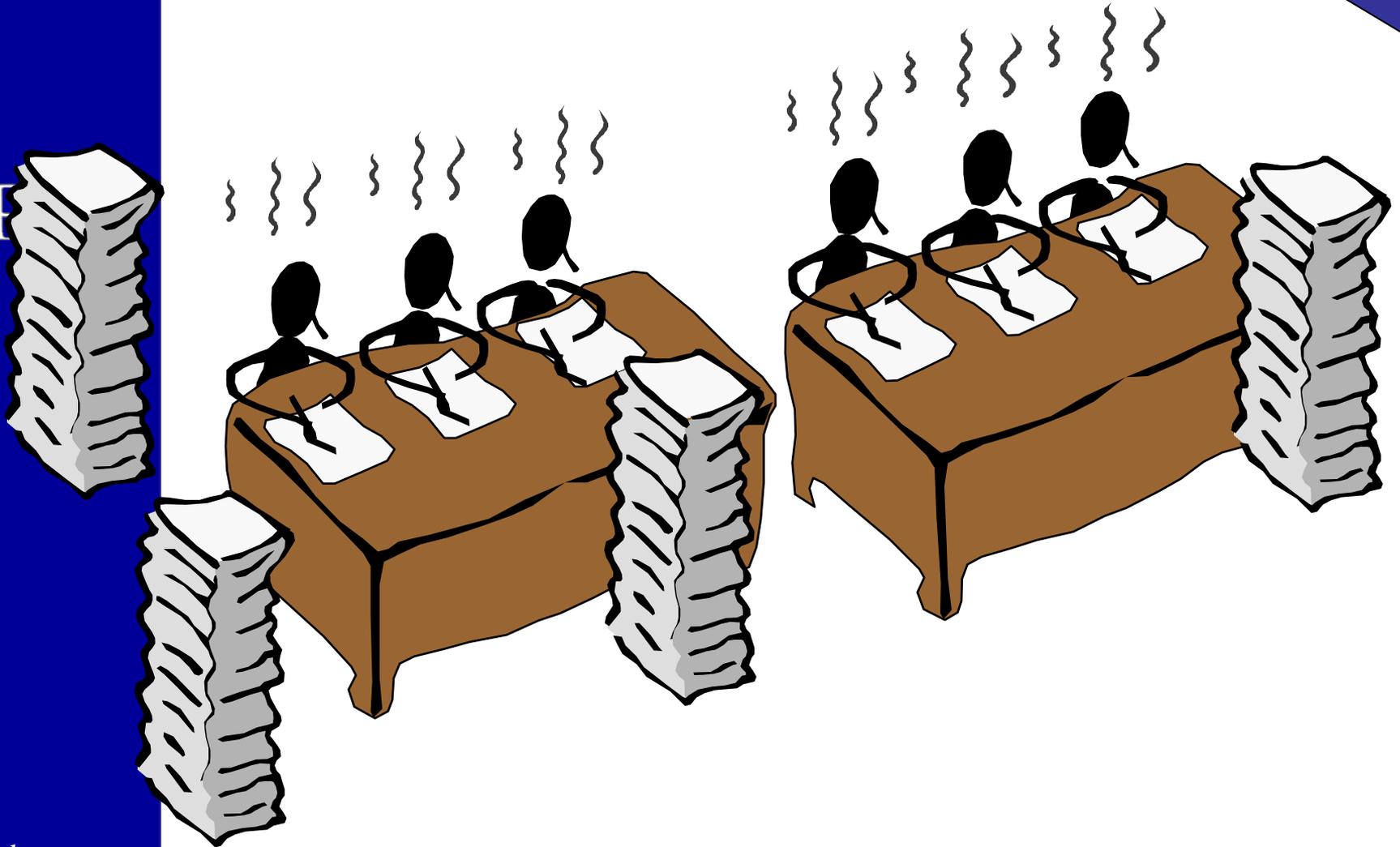
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Facing such critical scenario the management showed an unexpected wisdom; they hired a consulting company to restructure the Timbuktu team.

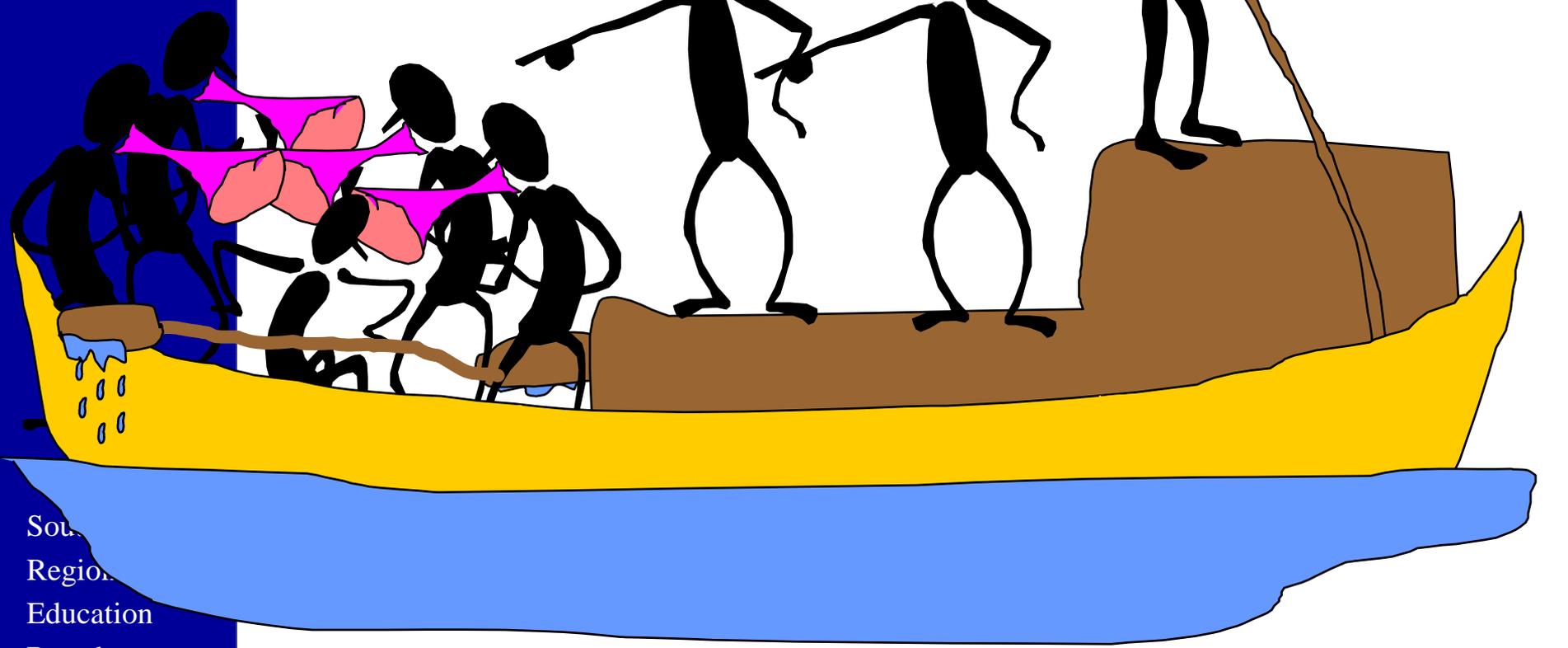
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After several months the consultants came to the conclusion that there were too many captains and too few rowers on the Timbuktu teams. A solution was proposed based on this analysis: **the structure of the Timbuktu team had to be changed!**

**As of today there will be only 4 Captains on the team led by two Managers, one Senior Manager and one rower. Besides that, it was suggested they improve the rower's working environment and offer a reward and recognition scheme.**

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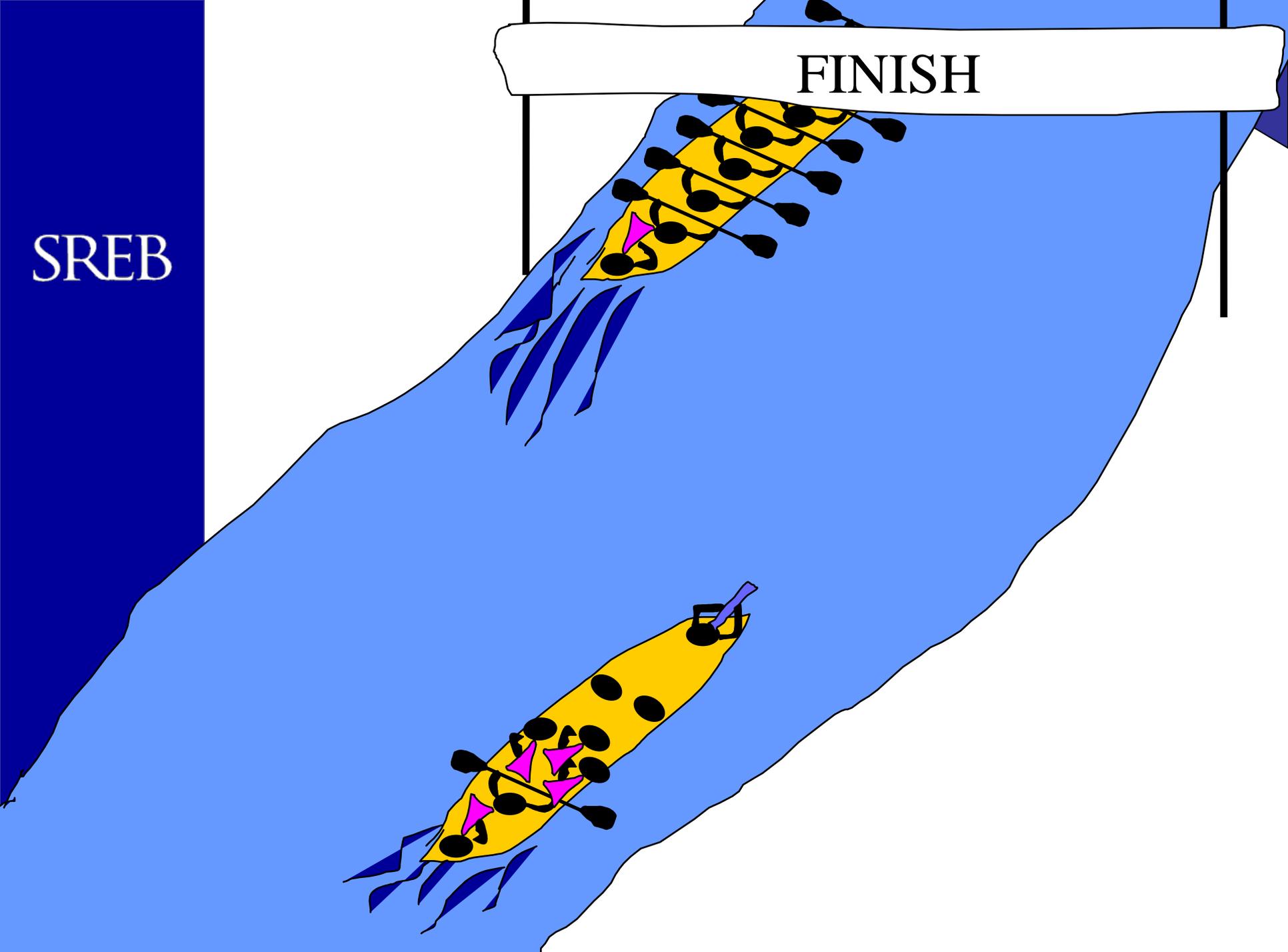
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**The next year, the  
Japanese team won  
by 2 miles!!**

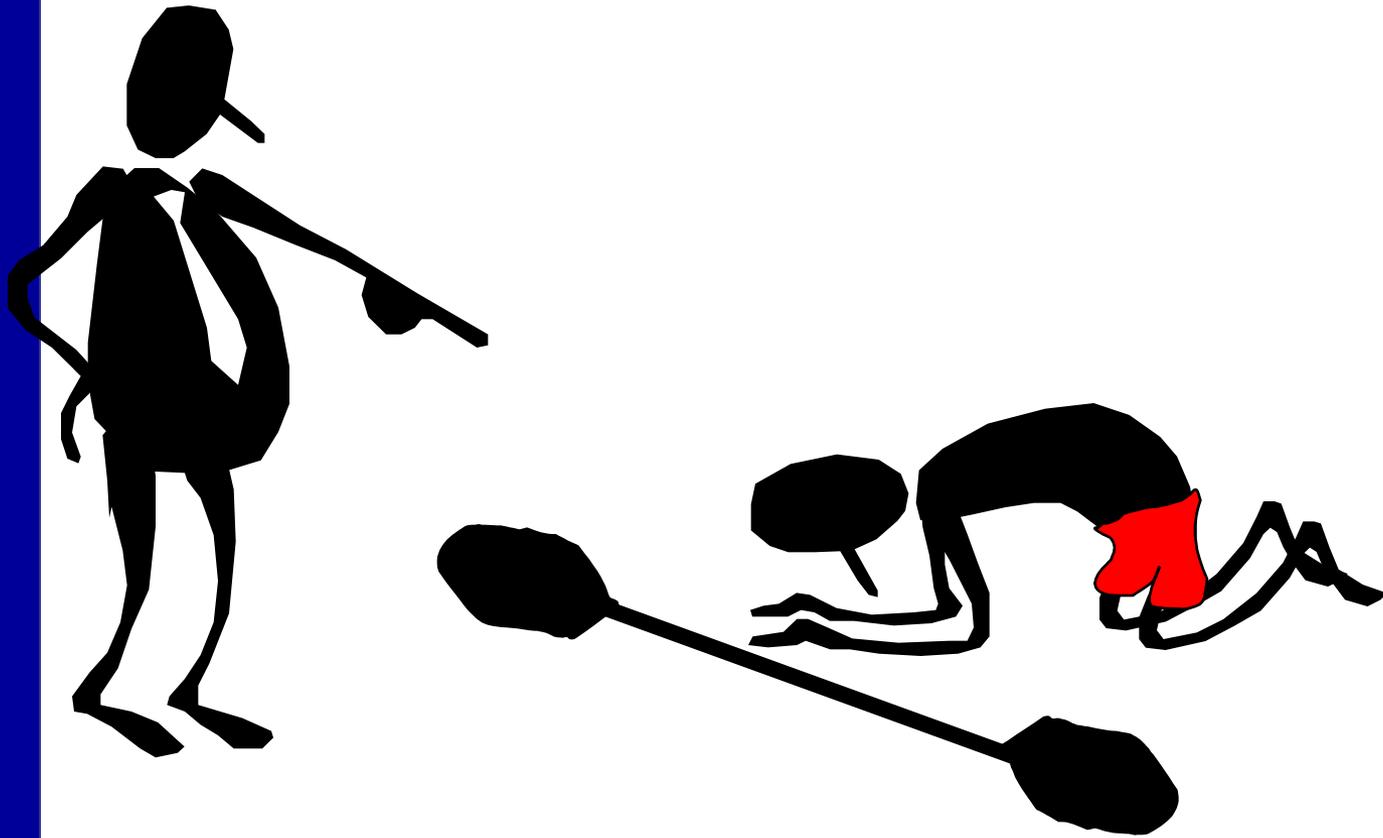
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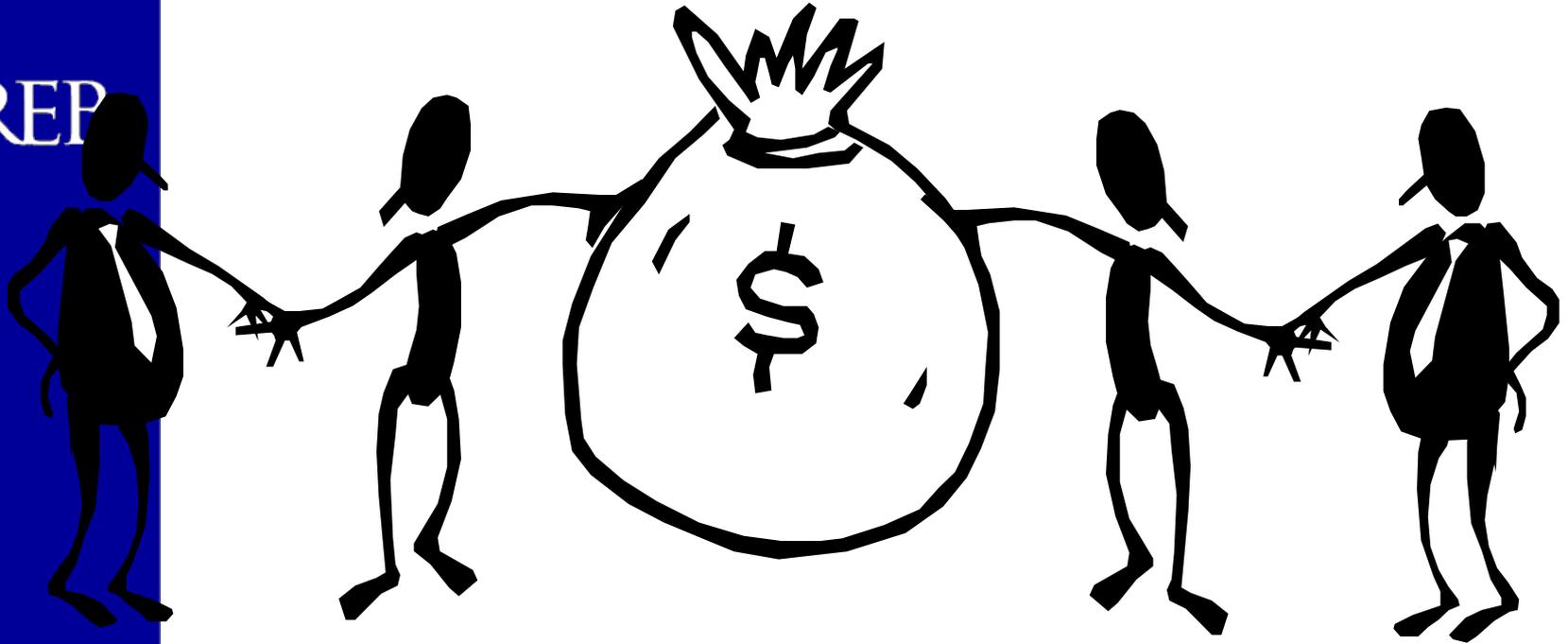


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**The Timbuktu team management immediately sacked the rower from the team based on his unsatisfactory performance.**

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**But a bonus was paid to the management for the strong leadership and motivation the team showed during the preparation phase.**

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**The consulting company prepared a new analysis that showed the strategy was good, the motivation was O.K., but the tool used was sub-standard and had to be improved.**

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**Currently the Timbuktu management is having a new boat designed and has advertised nationally for a new rower.**

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# What's the moral of the story?

- It's all about leadership---
- **And, that's YOU!!**



# Actions for Closing the “Knowing and Doing” Gap

- **Why – Before – How**
- **Knowing comes from doing**
- **Actions count more than words**
- **There is no doing without mistakes**
- **Measure what matters**
- **Leadership is key**

# What is the purpose of secondary career and technical studies/courses?

**Take 5 minutes to write down a one-sentence statement of purpose.**

# TCTW Goals

- Which goals on Page 2 of the planner best fit your school?

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# **TCTW Goals**

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- **Increase to 85 percent the percentages of CT students who meet career and college-readiness goals in reading, mathematics and science.**
- **Increase the percentages of technology center graduates who complete a CT concentration and enter employment within the field for which they were prepared and who enter postsecondary studies.**

# TCTW Goals

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- Increase to 95 percent the percentages of high school students who enter the technology center in grade 11 and graduate on time.
- Advance policies and leadership initiatives that sustain a continuous school improvement effort.
- Work with middle schools to use EPAS assessments to guide students in creating programs of study that prepare students for high school and technology center.

# TCTW Goals

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- Increase annually the percentage of students leaving the technology center with postsecondary credit or having met standards for postsecondary studies.
- Work with the high schools to annually increase the percentage of students entering technology centers prepared to earn college credit based on PLAN test scores.
- Increase annually the percentage of graduates that pass an improved employers exam. (National licensure, state exam/credential, etc., such as ASE)

- What are the necessary conditions for achieving TCTW goals through implementation of Key Practices?

See pages 2-3

# ***Technology Centers That Work***

## **Key Conditions:**

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- **A clear, functional mission statement**
- **Strong leadership**
- **Plan for continuous improvement**
- **Qualified teachers**
- **Commitment to goals**
- **Flexible scheduling**
- **Support for professional development**

# TCTW

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- **What are the benefits of adopting a comprehensive school improvement design for a technology center?**

# TCTW Key Practices

(Pages 3-5)

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- Culture of Continuous Improvement
- Challenging Program of Study
- Challenging Career/Technical Studies
- Work-based Learning
- High Expectations
- Challenging Academic Studies
- Active Engagement
- Teachers Working Together
- Guidance and Advisement
- Extra Help and Transitions

# How does your center rate?

- Take a few minutes to check the column that best fits the concepts and instructional practices that provide the foundation for your students.

Pages 7 and 8 of planner

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# ***“Quality Career/Technical Education is the Key to Success”***

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- 1. Career/Technical Teachers Who Ignore Academics Sell Their Students Short, page 13**
- 2. Academics Prepare Career/Technical Students for the Workplace and Continued Learning, page 14**
- 3. Authentic Assignments Enhance Exploratory Courses, page 15**

# TOPIC—Title of Reading

**Main  
Ideas**

**Details**

**GIST/Summary**

  
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- **What do employers expect of graduates from technology centers?**

# Applied Skills

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- **Basic skills high school graduates should possess as ranked as very important by employers**
  - **Professionalism / Work Ethic (80%)**
  - **Teamwork / Collaboration (74%)**
  - **Oral Communications (70%)**
  - **Ethics / Social Responsibility (63%)**
  - **Critical Thinking / Problem Solving (58%)**
  - **Information Technology Application (53%)**

# Applied Skills

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- **Basic skills high school graduates should possess as ranked as very important by employers, cont.**
  - **Written Communication (53%)**
  - **Diversity (52%)**
  - **Lifelong Learning / Self Direction (43%)**
  - **Creativity / Innovation (36%)**
  - **Leadership (29%)**

# Emphasis on Applied Skills

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Students have worked with one or more students in their class on a challenging science assignment at least monthly.	64%
Students analyzed works of literature in class at least monthly.	57
Students often tried to do their best work in school.	55
Students have drafted, rewritten and edited writing assignments before they were given a grade at least monthly.	52
Students stood before the class and made an oral presentation on a project or assignment to meet specific requirements of quality at least monthly.	37

# Emphasis on Applied Skills

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Students have often been part of a team or small group in class. 41%

Students have often revised their essays or other written work several times to improve their quality. 36

Students have orally defended a process they used to solve a mathematics problem at least monthly. 29

Students often had to develop and analyze tables, charts and graphs in their school work. 28

# Why Develop Leadership Teams?

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- Teachers spend too little time talking about their work.
- Leadership teams carry on if a leader leaves and sustains the effort.
- Communication improves.
- Teams come up with better ideas; work and responsibility are shared:
  - A facilitator
  - A recorder
  - A timekeeper
  - A scribe
  - A presenter

# Suggested Teams for CT Centers

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- **Guidance (Building a Bridge from feeder schools)**
- **Transitions**
- **Evaluation/Assessment Data**
- **Quality CT Instruction**
- **Curriculum Alignment**
  - **Alignment to industry and post-secondary readiness standards**

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## Most-improved and Non- Improved CT Centers

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- **Comparison of two sets of CT centers using 2006 assessment**
- **Similar ethnicity**
- **Similar sizes**
- **Similar locations – Urban, Suburban, Rural**
- **Similar parent education**
- **Different progress in implementation and achievement**

# Implementation Differences result in Achievement Differences

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	OH High Implement CT Centers	OH Low Implement CT Centers	Career Readiness Goal
Reading	287	275	279
Mathematics	304	293	297
Science	302	290	299

Source: 2006 *HSTW* Assessment

# Percent Meeting Reading Performance Goal by Sub-groups

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<b>Reading</b>	<b>OH High Implement CT Centers</b>	<b>OH Low Implement CT Centers</b>
<b>Minority</b>	<b>49%</b>	<b>46%</b>
<b>White</b>	<b>66</b>	<b>44</b>
<b>Low parent education</b>	<b>58</b>	<b>41</b>
<b>High parent education</b>	<b>70</b>	<b>48</b>
<b>Readiness Goal</b>	<b>85</b>	<b>85</b>

Source: 2006 *HSTW* Assessment

# Percent Meeting Mathematics Performance Goal by Sub-groups

SREB

<b>Mathematics</b>	<b>OH High Implement CT Centers</b>	<b>OH Low Implement CT Centers</b>
Minority	52%	46%
White	66	49
Low parent education	58	46
High parent education	70	52
<b>Career Readiness Goal</b>	<b>85</b>	<b>85</b>

Source: 2006 HSTW Assessment

# Science Achievement Scores by Sub-groups

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<b>Science</b>	<b>OH High Implement CT Centers</b>	<b>OH Low Implement CT Centers</b>
Minority	294	285
White	303	291
Low parent education	296	286
High parent education	308	295
<b>Career Readiness Goal</b>	<b>299</b>	<b>299</b>

Source: 2006 *HSTW* Assessment

# Key Question

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**Why do students at most-improved CT centers make greater gains in achievement than students at non-improved centers?**

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# Key Practice: High Expectations

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**Motivate more students to meet high expectations by integrating high expectations into classroom practices and giving students frequent feedback.**

**When he wrote, *“Blessed is he who expects nothing, for he shall never be disappointed,”* Alexander Pope could have been describing the expectations that some teachers at non-improved schools have for their students – nothing.**

# Literacy Skills Needed to be Successful in Postsecondary Education

- Summarize
- Paraphrase
- Categorize
- Infer
- Predict
- Use academic vocabulary

# Literacy Strategy

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## Four Corners

Students in this center would say that their CT teachers *often* stress reading, writing and mathematics.

**Page 17 in Planner**

# Examining Course Goal Statements Role Playing

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- Assume the role of a student
- Review the sample course goal statements for one course
  - Page 18
- Discuss your reaction as a student to the depth of knowledge/skills covered
- NEXT...
  - Think about the courses you teach
  - Discuss the extent to which your course goals address both employment preparation as well as further education

## Your Course Goals: Strengths & Weaknesses

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- Read the Helpful Questions used to Examine Major Course Goals on Page 19.
- Place a check mark for questions you address best in your current course goals.
- Circle the essential competencies at the bottom of the page you feel career/technical teachers most often neglect in establishing course goals.

**Page 19 of Planner**

# Why Raise Expectations?

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- **Communicate that education counts**
- **Enhance the image of CT programs and students**
- **Give students a sense of self-worth**
- **Help students see that the school believes in them**
- **Help students be more focused, motivated and goal-oriented**

# High Expectations Indicators

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- Teachers often clearly indicated the amount and quality of work necessary to earn a grade of A or B.
- Teachers were available frequently to help students with their studies.
- Students spent one or more hours on homework each day.
- They redo work to meet standards.
- They worked hard to meet high standards on assignments.

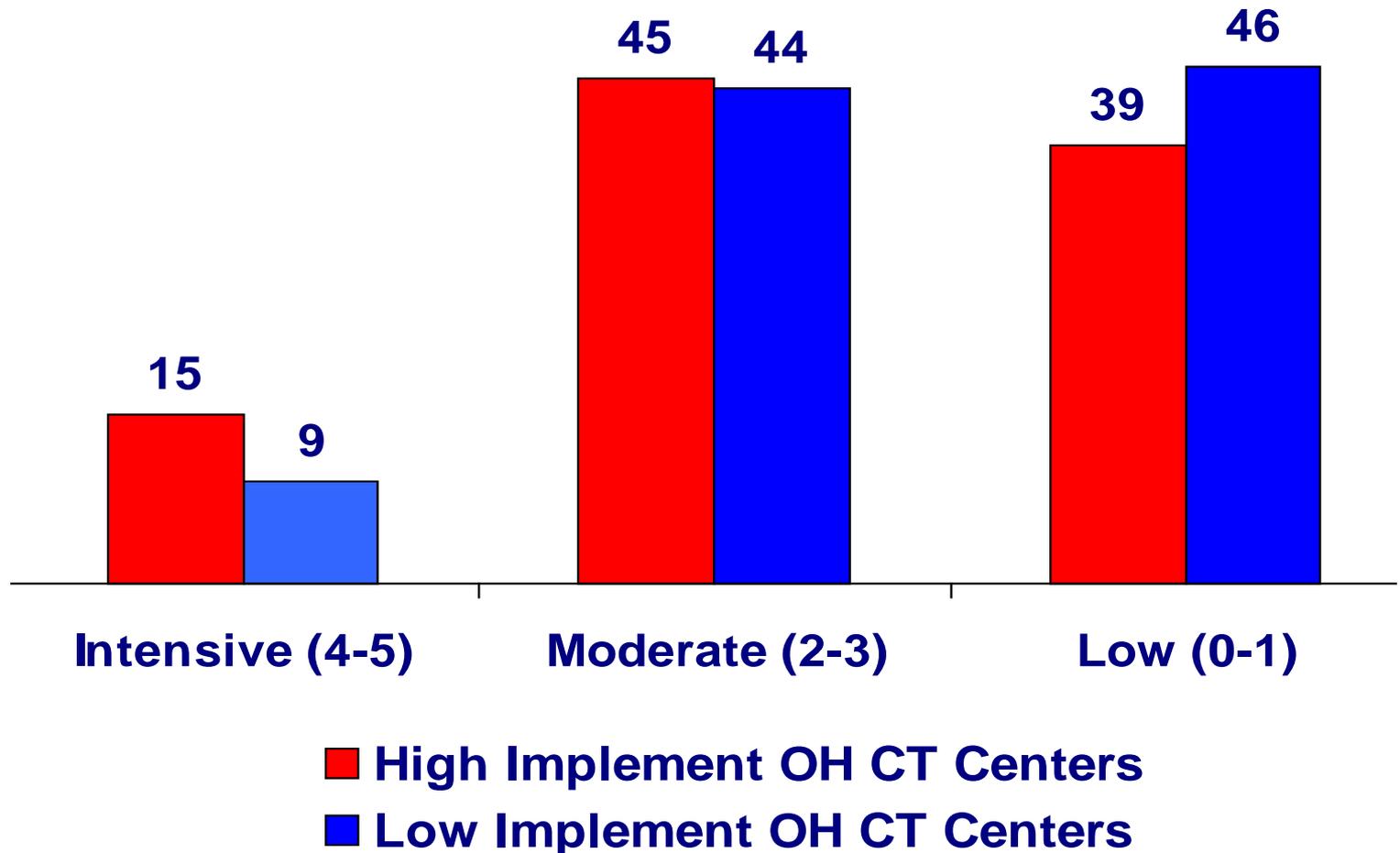
# *Technology Centers That Work*

- **Do expectations at a technology center impact academic achievement?**

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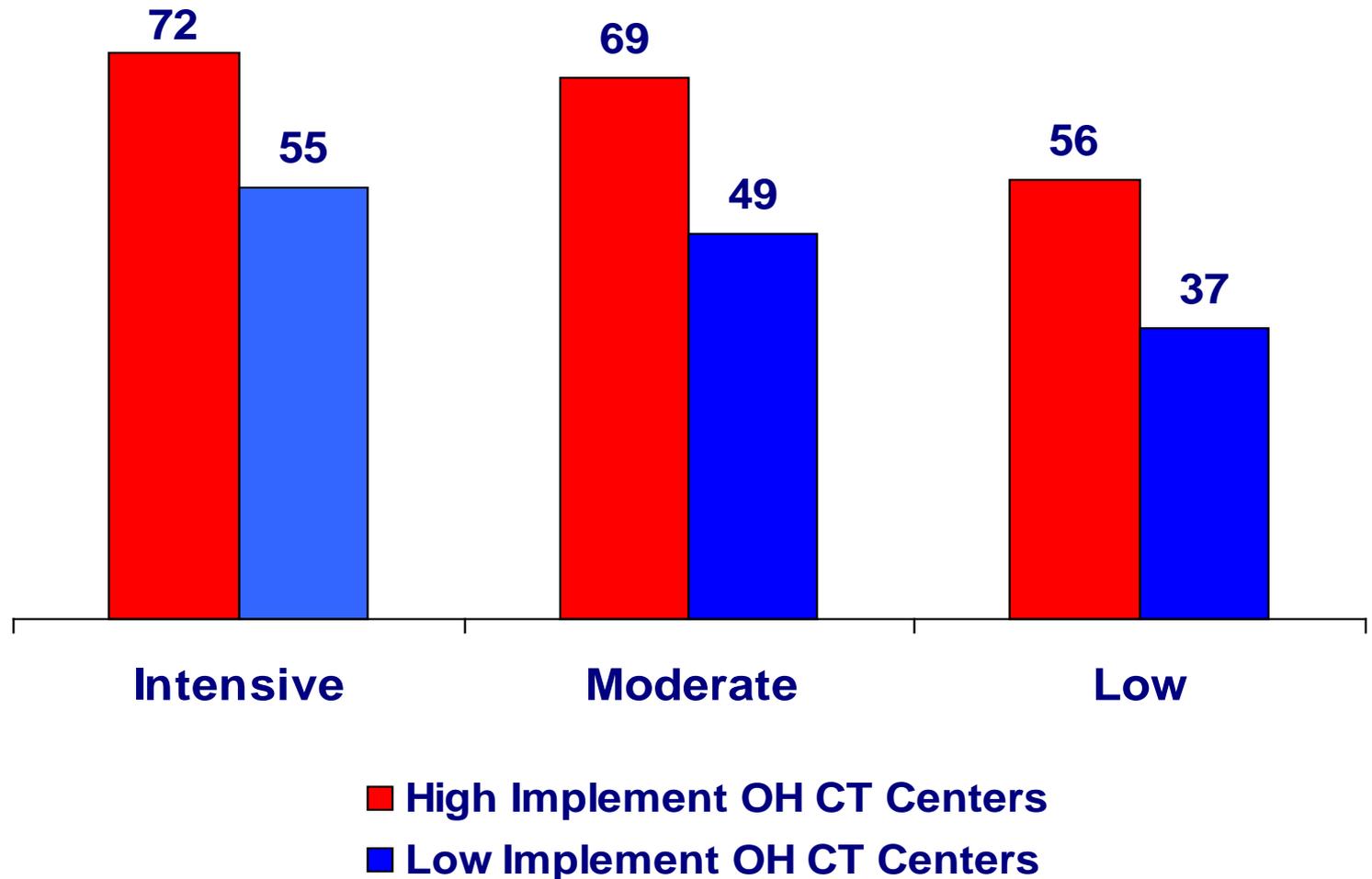
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# Level of High Expectation Practices by Implementation Groups



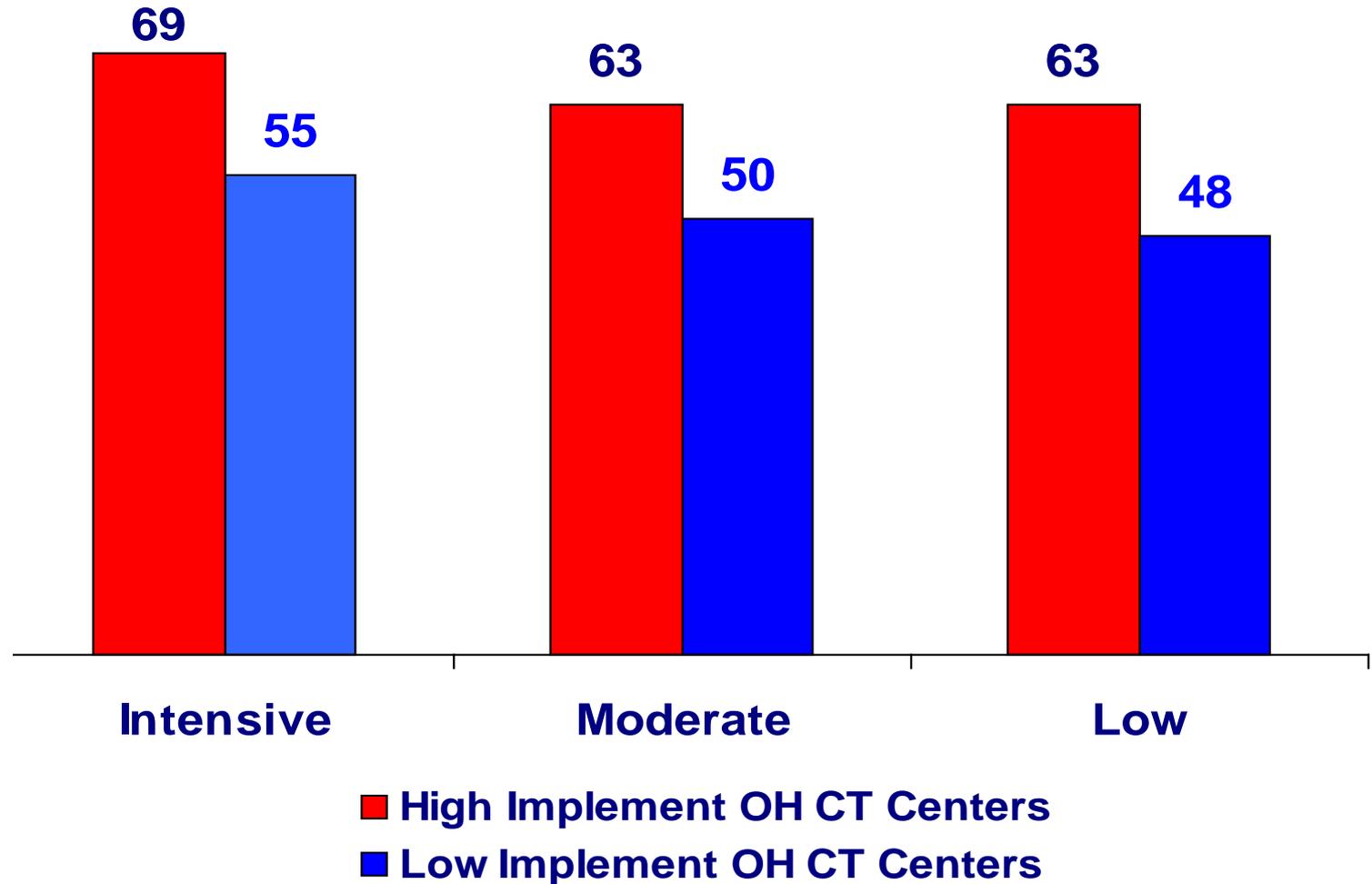
Source: 2006 *HSTW* Assessment

# High Expectation Practices and Meeting Reading Performance Goal



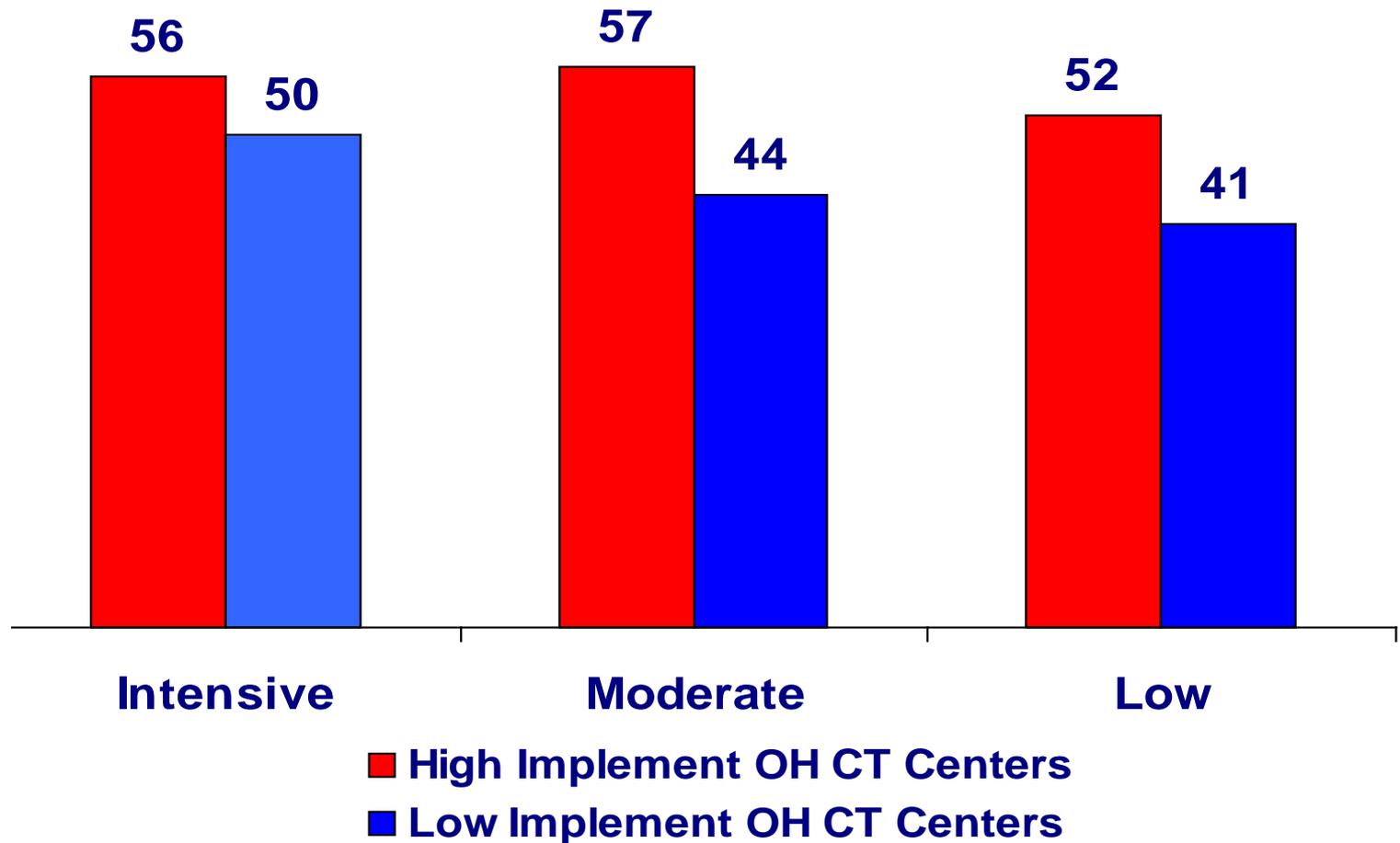
Source: 2006 *HSTW* Assessment

# High Expectation Practices and Meeting Mathematics Performance Goal



Source: 2006 *HSTW* Assessment

# High Expectation Practices and Meeting Science Performance Goal



Source: 2006 HSTW Assessment

## Significantly More Students in High Implement OH CT Centers Experienced High Expectation Experiences

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<b>Students said they:</b>	<b>High Impl.</b>	<b>Low Impl.</b>
Teachers indicated what it takes to earn A or B	50%	43%
Often revised their essays or other written work	34%	28%
Often worked hard to meet high standards on assignments	44%	38%

Source: 2006 *HSTW* Assessment

# Is CT Homework Important?

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- **Would your students say that you assign homework regularly?**
- **Are homework assignments connected to classroom activities?**
- **Do you require students to read and write outside of the classroom?**
- **Do your students leave your program with a CT portfolio?**

# Actions to Make Homework of Value

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- Multiple formats for homework include short-term practice and long-term high level projects
- Study groups established so students can get support
- Homework crosses multiple curricular areas and students receive credit in each area
- Homework highlights literacy and numeracy skills found in the job field
- Teachers communicate that homework is important
- Center establishes and communicates a clear homework policy

# High Expectations

- Review your current status related to the key practices and determine one outstanding practice in place.
- Determine one major action your school can take to establish common expectations for proficient-level work (i.e., define A, B, and C work).
- Identify the major weaknesses in course goals and identify two specific actions to modify course goal statements.
- Note: Actions should be measurable.

**Pages 20-21 of planner**

# **Key Practice:** **Program of Study**

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**Have students complete a plan of study that includes a CT concentration and an upgraded academic core.**

# Completing a Challenging Program of Study Matters

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## A Challenging Program of Study:

- Is the best predictor of achievement
- Gives focus
- Prepares students for the next step
- Makes high school count

# ***HSTW* Recommended Academic Core for All Students**

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- **Four credits in college-prep/honors English**
  - **Students read 8-10 books a year**
  - **Students write weekly**
  - **Students complete at least one major research paper**
- **Four mathematics credits – Algebra I, geometry, Algebra II and above**
- **Three lab-based science credits at the college-prep level; four credits with a block schedule**
- **Three credits of social studies; four credits with a block schedule**
- **Mathematics and Science in the Senior Year**

# Recommended Concentrations

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- **Mathematics and science concentration** – four credits in each field, with at least one at the Advanced Placement level
- **Humanities concentration** – four credits each in college-prep level language arts and social studies, with at least one at the college level and four additional credits from foreign language, fine arts, journalism, debate, music, etc.
- **Career/technical concentration** – four credits in a planned sequence of courses within a broad career field – pre-engineering, health/medical science, etc.

# CT Concentrations

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- **Should reflect local industry trends**
- **Should connect students to postsecondary studies**
- **Must outline a progressive sequence that leads to completion/certification**
- **Should help students connect academic knowledge and CT knowledge and skills**

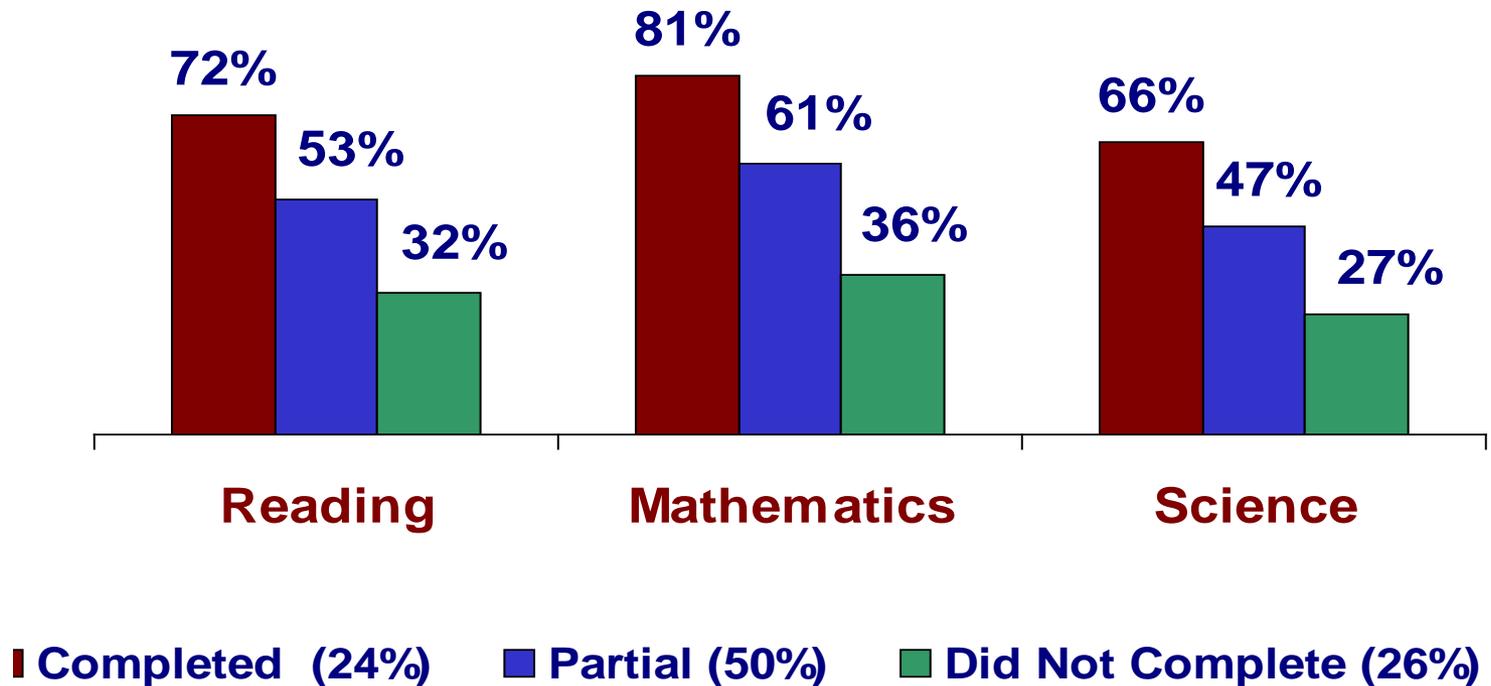
**Take 5 minutes to complete  
the pre-learning concept  
check on a *Rigorous  
Curriculum.***

***Take 3 minutes to discuss  
answers in table groups.***

***Page 22***

# Recommended Core and Higher Achievement

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Source: 2006 HSTW Assessment and Student Survey

# Percentage of Students Meeting HSTW Recommended Curriculum by Implementation Group

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	OH High Implement CT Centers	Met Readiness Goal	OH Low Implement CT Centers	Met Readiness Goal
English	36%	291	13%	281
Mathematics	21	320	9	311
Science	43	308	35	293

Source: 2006 HSTW Assessment

# Make a Prediction

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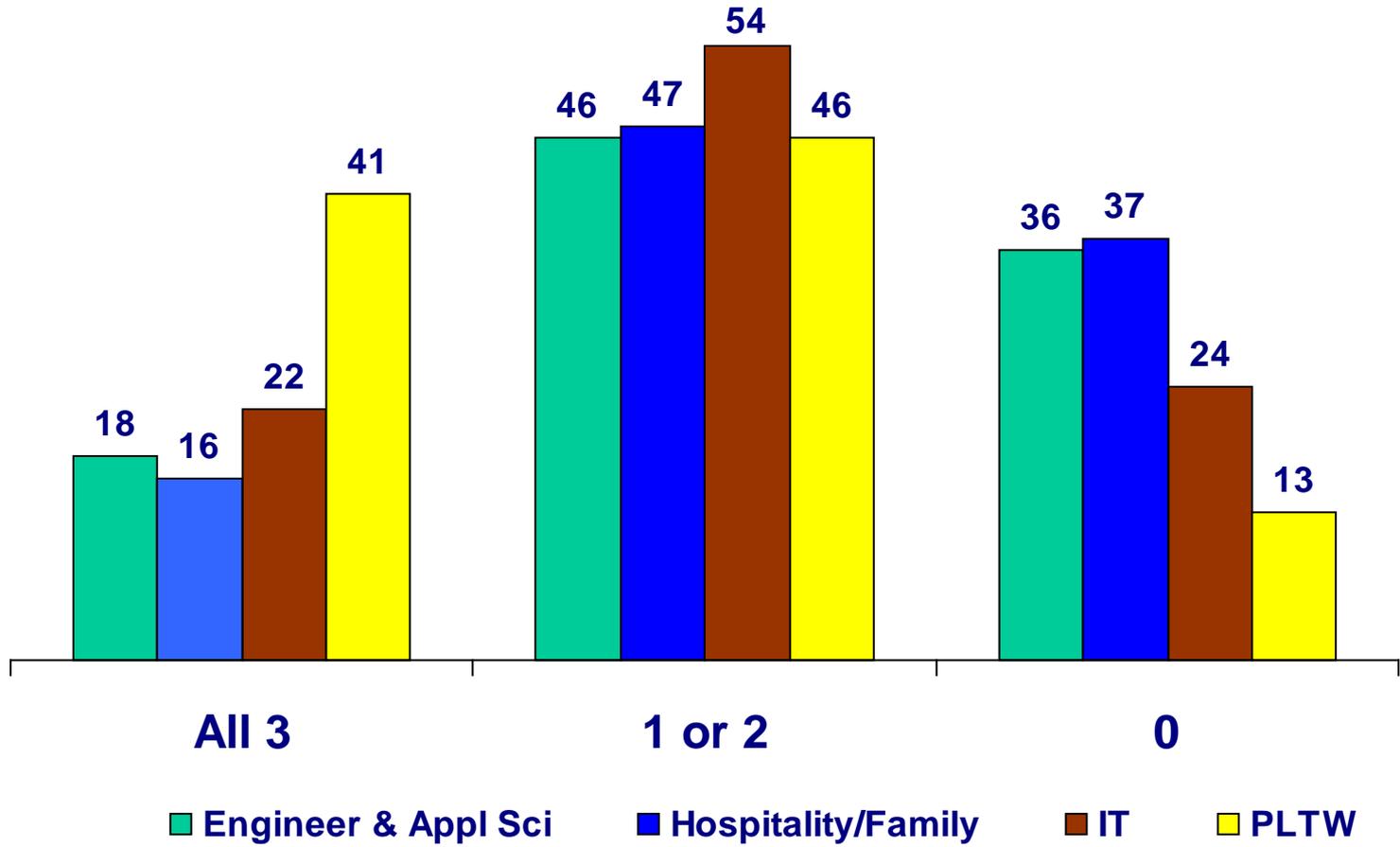
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- 1.** Which CT field had the highest percentage of students completing *HSTW*-recommended curriculum core?
- 2.** Which CT field had the highest reading, mathematics and science achievement?
- 3.** Students in which CT field had the highest-quality career/technical experiences?
- 4.** Which CT field had the highest percentage of students planning further study?

# Percentages of Students Completing HSTW-Recommended Curriculum

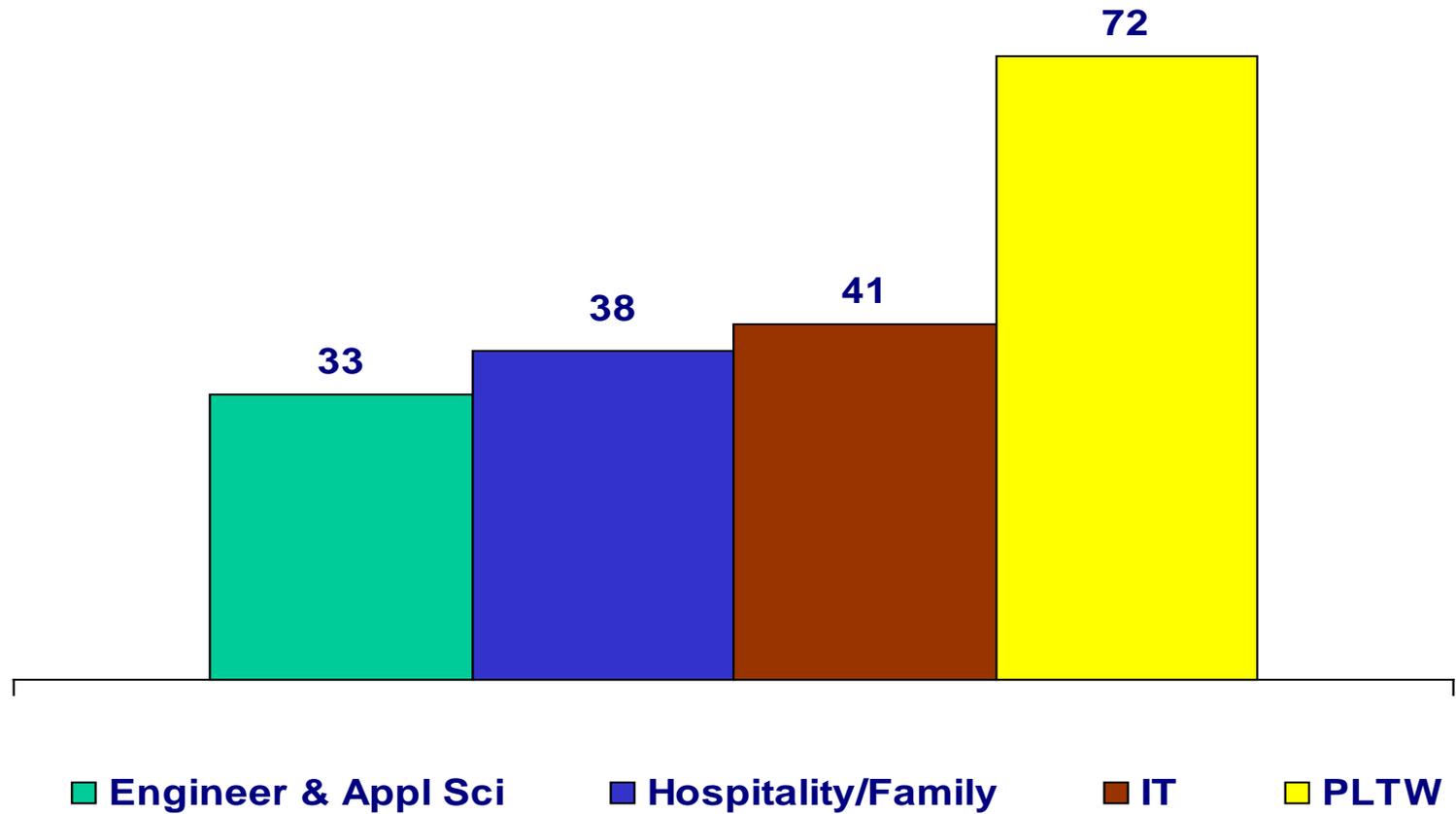
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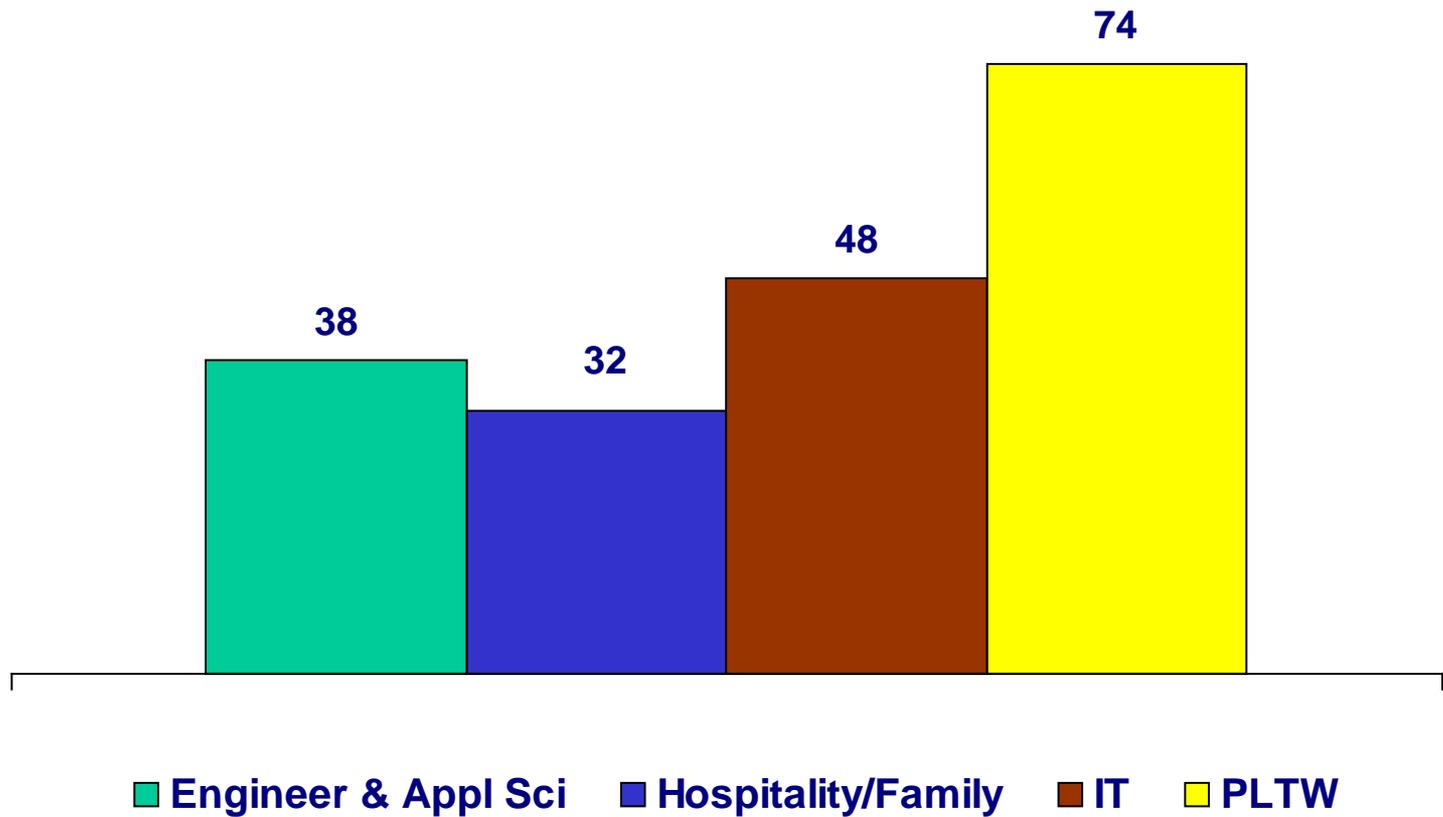
Source: 2006 HSTW Assessment

## Percentages of Students Completing the *HSTW*-recommended English Curriculum by Career/Technical Programs



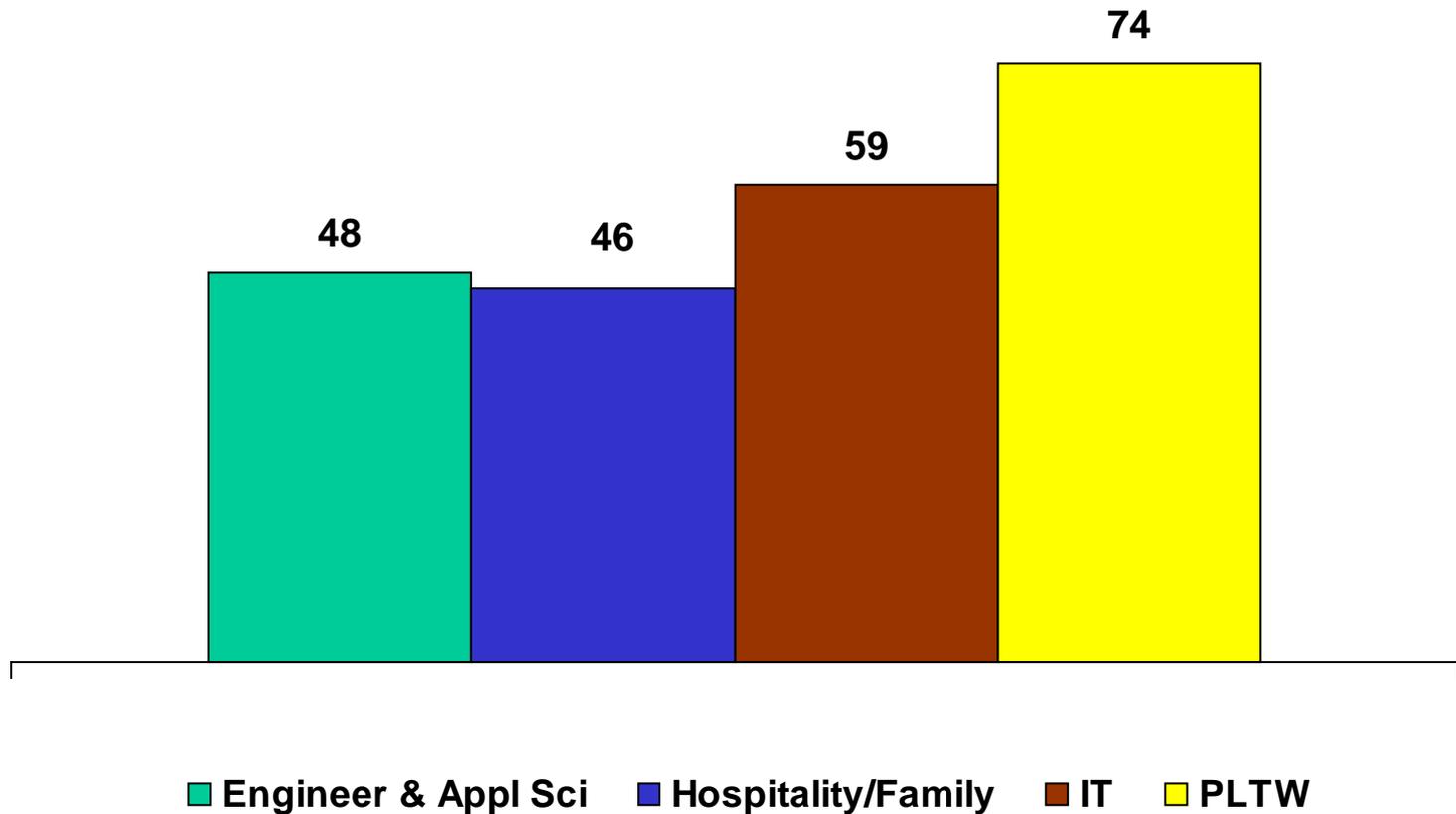
Source: 2006 *HSTW* Assessment

## Percentages of Students Completing the *HSTW*-recommended Mathematics Curriculum



Source: 2006 *HSTW* Assessment

## Percentages of Students Completing the HSTW-recommended Science Curriculum



Source: 2006 *HSTW* Assessment

# Why do you think PLTW percentages are higher in all three areas?

- Turn to a peer and share why.

# Percentages of Students Meeting the *HSTW* Performance Goals by CT Program

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	Reading	Math	Science
Engineering & Applied Science	45%	57%	48%
Hospitality/Family	42	43	29
Information Tech	57	65	56
PLTW	66	81	70

Source: 2006 *HSTW* Assessment

# Strategies for Implementing the *HSTW* Core Curriculum

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## Goal:

- **Enroll ALL students in the Core**
- **Increase by 10 to 20 percent annually more students in higher level courses**
- **Investigate alternative schedules to allow more students to take critical courses**
- **Get guidance staff on board**

# Strategies for Implementing the *HSTW* Core Curriculum

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- Assist students in seeing the need for rigorous academic core
- Develop a career pathways handbook that outlines the sequence of academic and CT courses needed to complete the program of studies
- Hold frequent vertical alignment meetings with both high school and postsecondary institutions and employers

**See Page 23**

# Strategies for Implementing the *HSTW* Core Curriculum

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- **Analyze and communicate student achievement data by pathway area**
- **Increase course offerings that provide students the opportunity to earn both CT and academic credit**
- **Use guest speakers, hold career expos and college fairs**

**See Page 23**

*“Students’ behavior and attitude toward school changes when school leaders agree to do whatever it takes to get students to grade-level standards, prepared for challenging high school studies and for postsecondary studies and careers.*

*Achievement goes up, graduation rates increase and students become more engaged **when leaders lead to set higher expectations and support students to meet them.”***

Dr. Gene Bottoms  
2006 HSTW Annual Conference

# CT Graduates

- **What do CT graduates say about their high school and CT classes?**

**See page 24**

# Major Actions to Enroll More Students in *HSTW*-recommended Core and Concentration

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- 1. Review your current status related to the key practice and determine one outstanding practice in place**
- 2. Identify major campus actions to work with feeder schools to increase the percentage of students taking the recommended academic sequence and to supplement the recommended academic sequence at the CT Center.**

**Pages 25-26 in Planner**

# **Key Practice:**

## **Teachers Working Together to Integrate Instruction**

- **CT and academic teachers engaging students regularly in reading books and articles, writing, making presentations and using high-level reasoning and thinking skills.**
- **CT, mathematics and science teachers working together to better align and integrate mathematics and science concepts and skills into assignments.**

# Literacy at Technology Centers

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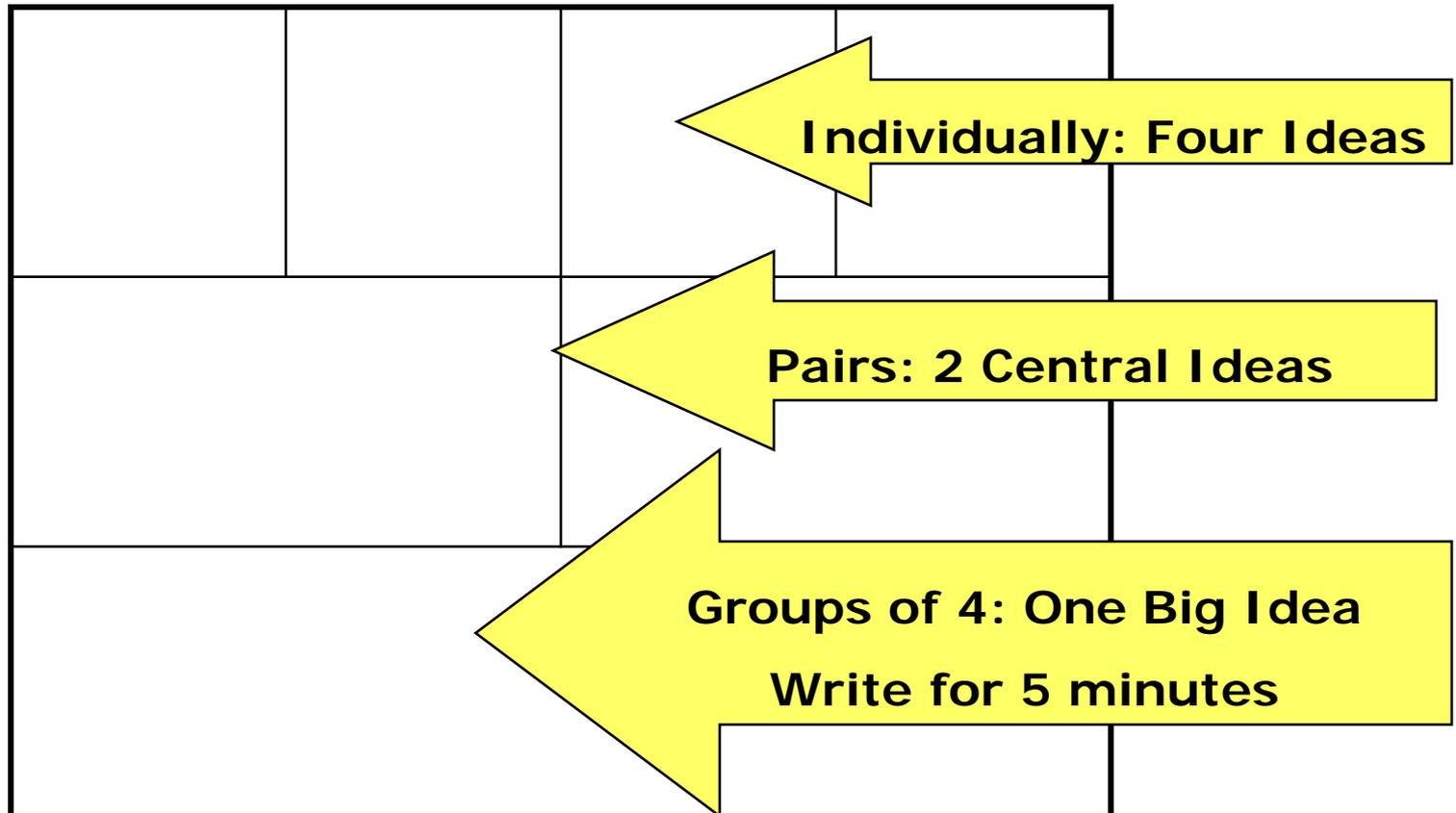
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Establish a center-wide literacy plan that:

- Defines and measures student progress in reading books (or equivalent).
- Engages students in the language of the career field weekly through structured reading, writing and oral presentations.
- Requires all students to complete weekly writing assignments.

# Literacy Strategy: 4-2-1 Free Write Pages 27-28

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Source: Silver & Strong, 2001, "Tools for Promoting Active, In-depth, Learning."

# Technology Center Literacy Goals

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## CT Students:

- Read a career-related article and demonstrate understanding of the content at least weekly
- Read and interpret technical books and manuals to complete assignments at least weekly
- Complete a project that first requires some research and a written plan before completing the task
- Complete short writing assignments of one to three pages weekly
- Complete a senior project that includes a research paper, a product and an oral presentation of findings before a panel.

## More Students in High Implement OH CT Centers Experienced Reading and Writing for Learning in CT Courses

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<b>Students said they:</b>	<b>High Impl.</b>	<b>Low Impl.</b>
<b>Often used word processing software to complete an assignment or project</b>	<b>63%</b>	<b>54%</b>
<b>Often revised their essays or other written work several times to improve their quality</b>	<b>34%</b>	<b>28%</b>

Source: 2006 *HSTW* Assessment

## More Students in High Implement OH CT Centers Experienced Reading and Writing for Learning in CT Courses

SREB

<b>Students said they:</b>	<b>High Impl.</b>	<b>Low Impl.</b>
Read an assigned book outside class and demonstrated that they understood the significance of the main idea at least monthly	30%	22%
Write in-depth explanations about a class project	68%	58%

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# Table Team Groups:

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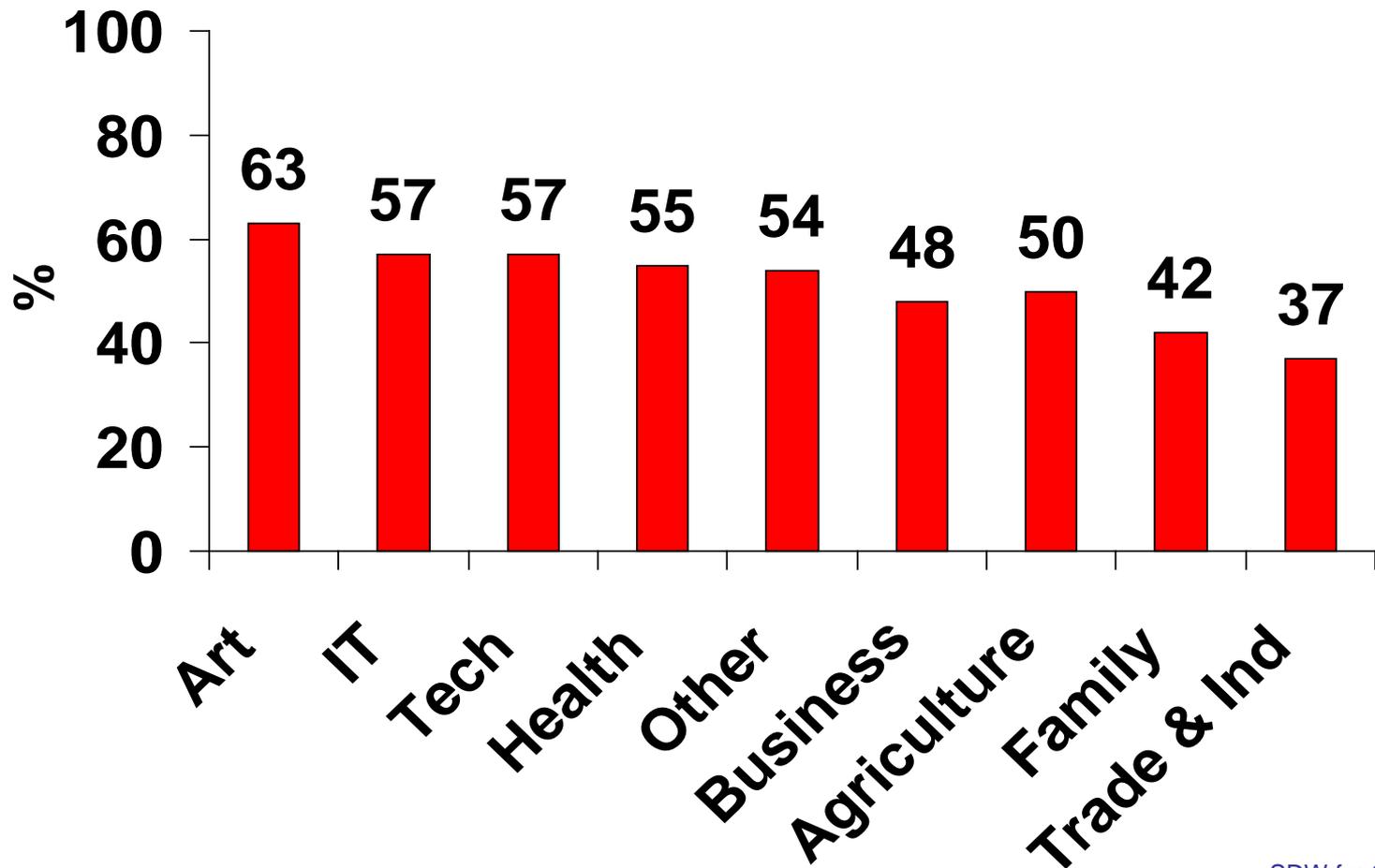
- Review your current status related to Literacy and identify one outstanding practice.

**Determine major actions that you will take to:**

1. Get students to read the equivalent of five CT books a year and demonstrate understanding of materials read.
2. Increase students' oral and written use of the CT vocabulary.
3. Revise classroom assessment to measure the student's ability to read and interpret technical manuals.

**Pages 29-30 in Planner**

## 2006 *HSTW* CTE Students: Percentage Meeting Reading Performance Goal-279



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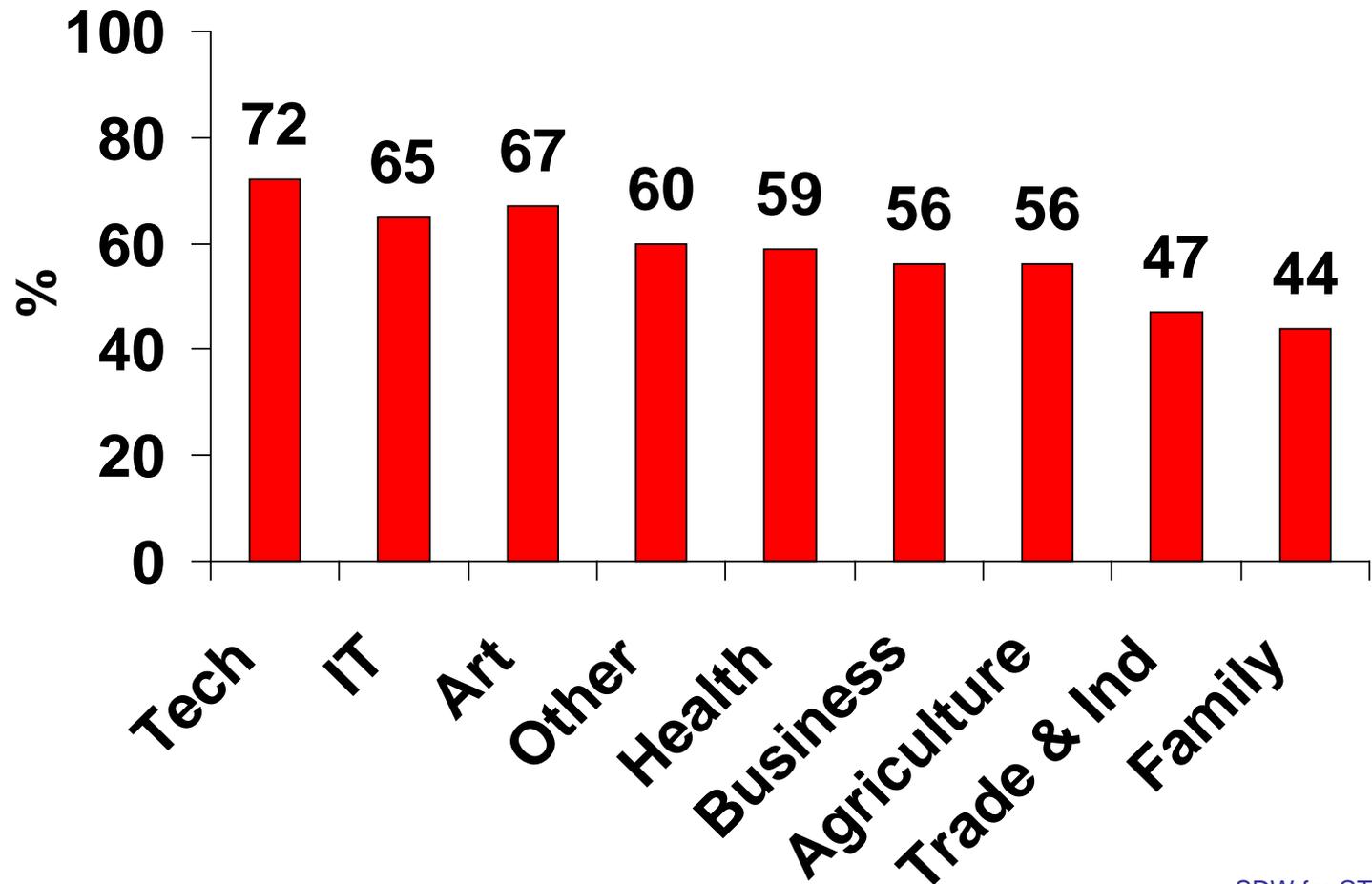


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# Why is mathematics important to the career and technical fields of study in your school?

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## 2006 HSTW CTE Students: Percentage Meeting Mathematics Performance Goal-297



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## More Students in High Implement OH CT Centers Experienced High-quality Mathematics Instruction

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<b>Students said they:</b>	<b>High Impl.</b>	<b>Low Impl.</b>
Took at least four full-year courses in math in grades 9 through 12	56%	47%
Their math teachers showed them how math concepts are used to solve real-life problems sometimes or often	76%	67%
Used a graphing calculator to complete math assignments at least monthly	61%	50%

Source: 2006 *HSTW* Assessment

# Significantly More Students in High Implement OH CT Centers Experienced High-quality Mathematics Instruction

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<b>Students said they:</b>	<b>High Impl.</b>	<b>Low Impl.</b>
Worked with one or more students in class at least monthly on a challenging assignment	44%	37%
Solved math problems other than those found in textbook at least monthly	67%	55%
Solved math problems with more than one-answers at least monthly	63%	52%
Worked in groups to brainstorm how to solve mathematics problems	52%	40%

Source: 2006 *HSTW* Assessment

# Numeracy at Technology Centers

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- **Require that CT teachers identify mathematics skills needed for each unit**
- **Create mathematics study teams**
- **Identify and use common mathematics vocabulary and processes**
- **Collaborate with mathematics teachers and curriculum specialists to create integrated mathematics activities**
- **Bring in guest speakers or examples of how mathematics is used in the field**
- **Create projects that require application of related mathematics concepts**

# How Do You Measure Up?

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**Complete the Skills USA/VICA  
mathematics assessment that has  
been provided for you at your table.**

**You will independently complete the  
questions and turn in your  
assessment.**

# Eight Steps for Creating an Authentic Integrated Project Unit

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- 1. Identify a major project that is rich with embedded mathematics and science content that career/technical faculty will have students complete during each 12 weeks of school.**
- 2. Identify the embedded mathematics standards that can be taught through the project.**

## **Eight Steps for Creating an Authentic Integrated Project Unit**

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- 3. Identify the literacy strategies, study skills and habits of success that students will be expected to apply in advancing their mastery of mathematics content and skills.**
- 4. Assess students' current knowledge and skills pertinent to the mathematics standards embedded in the project.**

# **Eight Steps for Creating an Authentic Integrated Project Unit**

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- 5. Have career/technical faculties design lessons and assignments to engage students with the mathematics and science knowledge and skills embedded in the project.**
- 6. Have mathematics faculty prepare lessons to teach the mathematics knowledge and skills embedded in the project.**

# Eight Steps for Creating an Authentic Integrated Project Unit

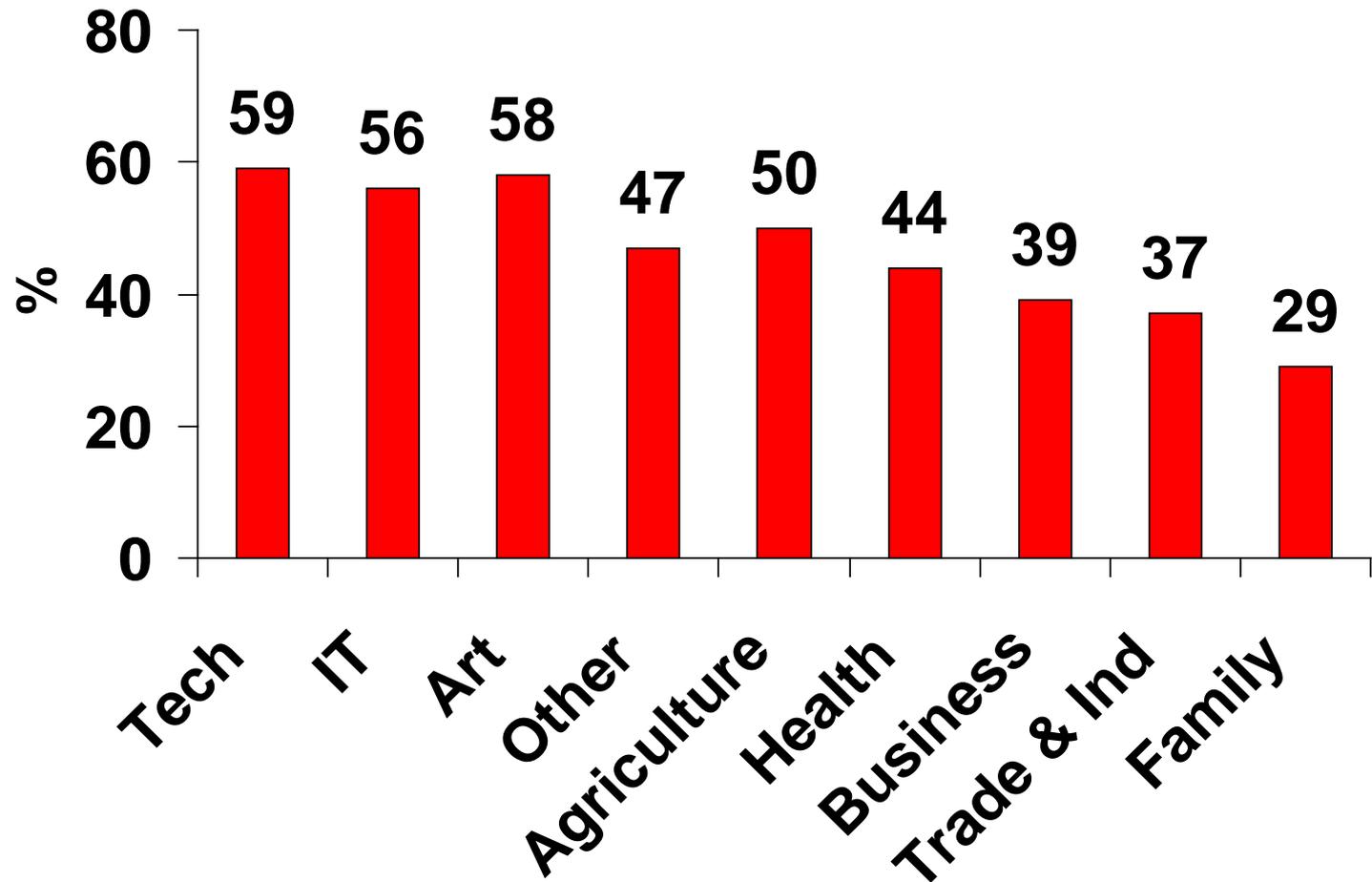
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- 7. Describe how students will demonstrate their understanding of mathematics knowledge and skills by completing the project as well as completing assignments designed to provide additional practice.**
- 8. Develop a summative unit exam to assess students' understanding of mathematics concepts, skills and procedures used in the project.**

## 2006 HSTW CTE Students: Percentage Meeting Science Performance Goal-299



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## More Students in High Implement OH CT Centers Experienced High-quality Science Instruction

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<b>Students said they:</b>	<b>High Impl.</b>	<b>Low Impl.</b>
Used science equipment to do science activities in a lab with tables and sink weekly	33%	20%
Read materials other than textbook dealing with science at least monthly	42%	35%
Prepare written lab report at least monthly	50%	30%

Source: 2006 *HSTW* Assessment

# Science at Technology Centers

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- **Require CT teachers to identify science content as they apply to the program area**
- **Identify and use common science vocabulary and processes**
- **Collaborate with science teachers and curriculum specialists to create integrated activities and experiments (the Chemistry of Food Science)**
- **Bring in guest speakers or examples of how science is used in the field**
- **Create projects that require students to conduct scientific investigations**

## **Table Teams: Mathematics & Science**

**Pages 32-33 in Planner**

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**Review your current status related to numeracy and science--identify one outstanding practice.**

**List major actions to:**

- 1. Integrate mathematics assignments into CT courses**
- 2. Support CT teachers to strengthen their mathematical knowledge and skills so they can plan learning experiences that prepare students for college and career readiness**
- 3. Plan major projects that involve mathematics and/or science application.**

# **Key Practice:**

## **Career/Technical Studies**

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**Provide more students access to intellectually challenging career/technical studies in high-demand fields that emphasize the higher-level mathematics, science, literacy and problem-solving skills needed in the workplace and in further education.**

# Quality CT Involves:

- 
- 
- **Creating new courses blending academics and technical content**
  - **Developing standards, conditions and agreements for awarding postsecondary credit**
  - **Requiring that teachers be certified in their field (state/national employer certification)**

## Quality CT Includes:

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- **Requiring a senior project with academic, technical and performance standards**
- **Providing student opportunities to earn a recognized employer certification**
- **Including dual enrollment opportunities for students to earn college credit through dual enrollment**

## Quality CT Education Indicators

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- Completed four or more credits in CT courses
- Used mathematics to complete challenging assignments weekly
- Read and interpreted technical books and manuals weekly to complete assignments
- Read a career-related article weekly and demonstrated understanding of the content
- Used computer skills monthly to do assignments in their CT studies

# Quality CT Education Indicators

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- Had challenging assignments in CT classes at least monthly
- Completed a project that required research and a written plan
- Had to meet certain standards on a written exam to pass a course
- Completed a senior project that included researching a topic, creating a product or performing a service and presenting it to the class
- Spoke with or visited someone in a chosen career field
- Spent 30 minutes or more on CT homework each day

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# Brainstorming

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1. Why give students access to quality CT
2. List of indicators for a high quality CT program

**Page 42 in Planner**

# Quality Career/Technical Courses Matter

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- **Improve high school retention**
- **Increase understanding of academic content**
- **Give meaning to school**
- **Motivate students**
- **Improve retention of academic skills**
- **Get on track faster after graduation**
- **Discover career options**

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# Purpose of High School Career/Technical Studies

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- Prepare students for work and further study
- Advance technical literacy
  - Understand technical concepts
  - Read and comprehend technical materials
- Advance technical numeracy
  - Apply mathematics problems within chosen field
  - Solve problems and think critically

# Organizing High School CT Programs around 16 Career Clusters

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- Agriculture, Food and Natural Resources
- Architecture and Construction
- Manufacturing
- Transportation, Distribution and Logistics
- Business, Management and Administration
- Marketing, Sales and Service
- Finance
- Hospitality and Tourism

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# Organizing High School CT Programs around 16 Career Clusters (cont'd)

- 
- Health Science
  - Arts, Audio/Video Technology and Communications
  - Information Technology
  - Science, Technology, Engineering and Mathematics
  - Human Services
  - Law, Public Safety, Corrections and Security
  - Education and Training
  - Government and Public Administration

**([www.careerclusters.org](http://www.careerclusters.org))**

# Strategies to Strengthen CT Courses

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- **Enroll at-risk students in at least two CT credit course for each four academic courses**
- **Offer ninth grade exploratory course introducing broad career fields**
- **Increase the number of students completing four or more technical courses**
- **Expand opportunities for students to earn post-secondary credit or certifications while in high school**
- **Provide summer experiences in the center for middle/ninth/10th grade students**

# Quality Blended CT Courses

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- **Develop new types of courses that blend academic/CT courses**
  - **Food/science**
  - **Geometry/construction**
  - **Others**

# Strategies to Strengthen CT Courses

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- Design Course **Syllabi** for every CT course
- Emphasize **literacy, numeracy, science and technology** in all CT classrooms through rigorous assignments, projects and homework.
- Create **CT assessments** (interim and end-of course) that reflect industry standards and require use of literacy and numeracy skills
- Get input from **local business and industry** partners to strengthen **applications of career/tech content**.
- Require career-focused **senior project**

# Table Team Groups:

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- 1. Identify one Outstanding Practice.**
- 2. Brainstorm actions to enhance CT courses:**
  - **Actions to increase the percentage of students meeting the definition of CT Completer**
  - **Actions to increase the percentage of students earning certifications or postsecondary credits**
  - **Actions to improve the quality of career/technical courses**

**Pages 43-45 in Planner**

# Key Practice:

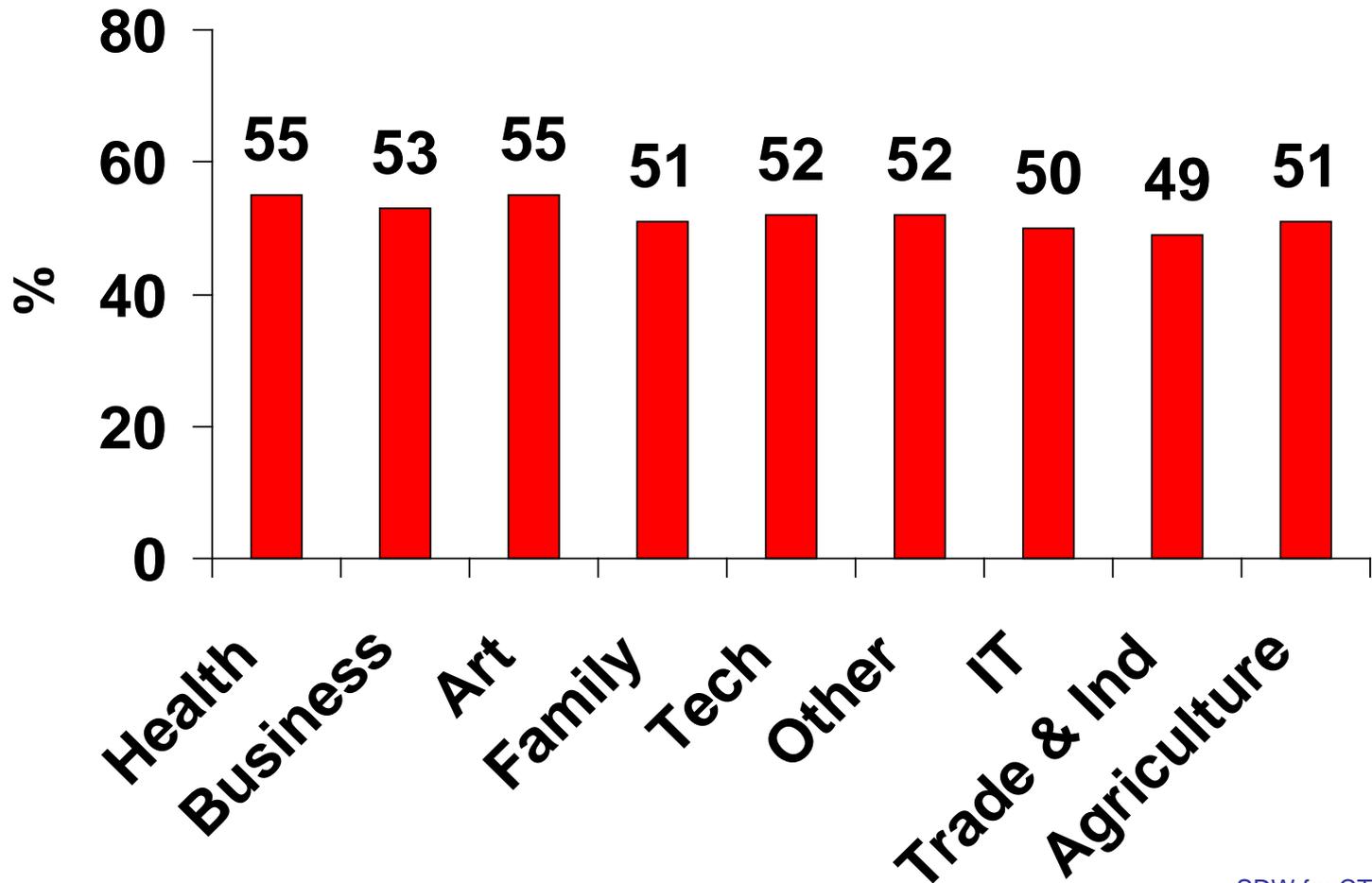
## Work-based Learning

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**Enable students and their parents to choose from programs that integrate challenging high schools studies and work-based learning and are planned by educators, employers and students.**

## 2006 HSTW CTE Students: Percentage Having Intensive Work- based Learning Experiences



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# What Makes a Quality WBL Program?

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**Each student has:**

- **Classroom and work-site assignments that are correlated to career field**
- **Work-site experiences connected to career goals**
- **A work-site mentor**

# Work-based Learning Opportunities

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- **Job Shadowing**
- **Service Learning**
- **Co-op**
- **Internships**
- **Youth Apprenticeship**

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# Quality WBL Programs Have High Expectations for Students

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**They require students to:**

- **Attend a regular class and/or seminar**
- **Plan experiences with work-site employer and teacher**
- **Keep a journal of experiences**
- **Develop a career portfolio**

## Table Teams: WBL

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- Review your current status and determine one outstanding practice in place.
- Recommend one action to increase access and quality of work-based learning opportunities.

**Pages 46-47 of Planner**

# **Key Practice:**

## **Guidance and Advisement**

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**Involve students and parents in a guidance and advisement system designed to ensure that students complete a plan of study that includes a CT concentration and an upgraded academic core.**

  
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- **What do you think we found to be the biggest problem between home schools and CT centers?**

# A Supportive Guidance System Matters

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- **Clear goals**
- **Focused program of study**
- **Students have someone who cares**
- **Students believe in themselves**
- **Students get needed services**

# A Teacher Advisement System is Key

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School leaders need to:

- Hold student, parent, and mentor annual meeting at a technology center to review progress
- Develop efforts to educate middle and high school parents, teachers, and students about successful high school completion and career readiness.

# A Good Guidance and Advisement Program Includes:

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- Assist students in planning their high school program of study by the end of grade nine
- Meet individually with an adviser or counselor to talk about student plans for careers or further study
- Review program of study with student at least annually
- Assist students and parents with the postsecondary application process

# System of Guidance and Advisement

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- Determine one outstanding practice in place.

## Major action to:

- Better help students plan and complete a coherent and rigorous program of studies that blends their academic coursework and CT coursework.
- Help students successfully transition to college and/or employment.

**Pages 48-49**

# Key Practice: Extra Help

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**Provide a structured system of extra help to enable students to meet higher standards.**

## Extra Help is important because it:

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- Reduces failure rates
- Reduces the ninth grade retention rate
- Increases the high school graduation rate
- Encourages students to “stretch” themselves

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# Actions for Transition from High School to Career/Technical Centers

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## Gearing Up — grades nine and 10

- Work with high school teachers to create application projects and assignments that would relate to projects at the CT center; enroll students in a 4 to 6 week summer enrichment program if possible
- Work with high school teachers to communicate academic skills students need to be successful in program of study
- Orient high school teachers, students and parents to CT Center expectations

# Implementation Issues

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- How do you identify students who need it?
- How do you require students to attend?
- How do you get parents' commitment?
- How will extra help be delivered?
- Who will teach it?
- How will the strategy or strategies be matched to student needs?

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# Extra Help Strategies for CT Centers

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- Peer Tutoring
- On-line Tutoring and Computer-Assisted Instruction
- Common vocabulary and procedures
- After School Programs (and Morning and Saturday Programs)
- Credit Recovery Classes
- Organized Student Study Teams
- Just-in-time Tutoring

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# Extra Help

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Identify:

1. One Outstanding Practice
2. Major actions to communicate more clearly with middle and high school teachers the pre-requisite knowledge and skills students need to be successful in a CT program of study.
3. Major actions to address the academic deficiencies of students who enter into CT programs (reading and mathematics).
4. Major actions to build a climate in which students help each other master the technical materials and the mathematical concepts needed to succeed at your institution.
5. Major actions to see that students are taking the right language arts and mathematics courses in their home school.

**Pages 50-51 of Planner**

# Transition

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## High school to post-secondary studies or employment

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# Postsecondary Transition

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- 1.** What percent of seniors enrolled in your Technical Center plan to go onto further study?
- 2.** What percent will demonstrate readiness in language arts and mathematics in postsecondary studies?
- 3.** What percent will require remedial postsecondary studies?
- 4.** What percent will directly enter the workplace?

# Why target postsecondary transition?

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- Senior year not taken seriously
- Low ACT and SAT scores
- High remedial rate in English and mathematics
- Students unprepared for workforce
- Lack of skilled labor
- National completion rate for college only 39.9%

# Research Based Strategies for Postsecondary Transition

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- **Students earn post-secondary credit while in high school**
- **Work with feeder high schools to establish transition mathematics and English courses**
  - **Courses aligned to college and career readiness standards**
- **Assist high schools in communicating to students the higher level academics necessary for successful completion of CT programs**
- **Explore options for offering academic courses and credit recovery on CT campus**

# Additional Actions for Making the Senior Year Count

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- **Work with postsecondary institutions to identify 11<sup>th</sup> grade CT students not ready for postsecondary study**
- **Develop special strategies to get students prepared for CT study (summer bridge)**
- **Encourage seniors to enroll in at least three academic courses**
- **Consider requiring a senior project that includes a research paper, a product or service, an oral presentation and a PowerPoint**

# Transitions

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## Determine

- One outstanding practice in place.
- Major actions to:
  1. Provide students who meet college and career readiness standards to earn college credit during the senior year of high school.
  2. Address the academic deficiencies of students the senior year who plan to attend college but are not prepared.
  3. Provide students planning to directly enter the workplace an opportunity to earn an industry-recognized certification that gives them a competitive edge in the labor market.

**See Pages 52-53 of Planner**

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# Team Planning...

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# Key Practice: Continuous Improvement

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**Use site-based data to continuously improve school culture, organization, management, curriculum and instruction to advance student learning.**

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# Why is using data for continuous improvement important?

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- Know where you are-where you need to be
- Inspire change
- Measure progress
- Link achievement with changes in classroom practices
- Celebrate accomplishments
- Assess—Plan—Do—Evaluate--Repeat

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# Teachers Report Intensive School Improvement:

**Top 50**      **All Sites**

Goals are clear	80%	40%
Teachers maintain a demanding and supportive environment	71%	34%
Principals stress the need to teach all students to the same high standards <b>(monthly)</b>	60%	33%
Teachers continue to learn and seek out new ideas	74%	42%
Teachers/administrators work as a team	78%	37%
Teachers use data to evaluate school and classroom practices	51%	25%

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**Take five minutes to complete the climate for continuous improvement checklist as a team.**

**Page 54 in the Planner**

# How are performance and practices measured?

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- State Assessments
- Teacher Assessments
- Course Failure (ninth-grade)
- ACT/SAT Results
- Compass/Work Keys Results
- Attendance Rates
- Program Enrollment/Completion
- Certification Exam Results
- Advisory Committee Input

# How are performance and practices measured?

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- Instructional Review
- Staff Experience
- Teachers hold industry certification and work experience in field
- Postsecondary Remediation Reports
- Drop-out exit reports
- Master Schedule
- Focus Group Interviews
- Graduate and Employer Feedback

# How Schools Measure the Depth of *HSTW* Implementation

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## The *HSTW* Assessment:

- **NAEP – referenced assessment in Reading, Mathematics and Science**
- **Student survey of school and classroom practices**
- **Student transcript analysis**
- **Faculty Survey**

**Annual Report**  
**Technical Assistance Visit**  
**Assessing Practice**

# Create Focus Teams and Get Them Organized

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- **Select Chair & Recorder**
- **Chair: Keeps group on target, moving and involves all**
- **Timekeeper: Limits time per speaker, gets group back for large meeting**
- **Recorder: Get the information down for all**
- **Everybody: Get the job done**

# Step 1: Team Planning

## Pages 57-58

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- 1. Prioritize Actions developed during table team brainstorming**
  1. Rank items based on the impact on student achievement and high school completion rates
- 2. Select 5 of the highest ranked items for year 1**
- 3. Have 1 item in each of the 4 areas of structural, instructional, support and leadership change**
- 4. Identify 5 of the highest ranked priority items for years 2 and 3**

## Step 2: Team Planning

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### 1. Identify Focus Teams (pp. 55-56)

Focus on what you can change:

- **Structure:** Rigor of what is taught and what is expected.
- **Quality Instruction:** How are students taught?
- **Support for Students:** How is staff related to students?
- **Support for Teachers:** How do teachers learn and related to each other?
- **Leadership:** How are we involved in using data for Continuous Improvement?

## **Step 3: Develop Implementation Steps for Actions Page 57-58**

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- **Assign a major action to one or more of the focus teams**
- **Draft a charge to the team regarding implementation of this action in year 1**
- **Have teams develop an implementation plan for the action, present it to the school improvement team and eventually to the entire faculty**
- **When year 1 is completed, start work on year 2**
- **Ask teams to develop benchmarks and monitor plan for implementation**

## Step 4:

**Identify staff  
development needed to  
implement Year 1, 2  
and 3 actions.**

**Page 59**

# Ideas to Introduce *Technology Centers That Work* to Faculty

- SREB materials/newsletters
- Send teams to national staff development workshops
- Teams share and implement ideas
- Visit outstanding *HSTW* sites
- Create study teams around selected materials
- Seek input on implementation plan
- Technical Assistance Visits

**Page 60**

## Next 30 Days – Establish Focus Teams

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- Present priority actions developed during the workshop to entire staff
- Form focus teams and assign priority actions to teams
- Ask teams to develop implementation plans

# Second Month – Focus Team Development Implementation Plans

- School improvement team reviews initial draft of focus team implementation steps with timeline and benchmarks
- Have staff review implementation plan
- Develop revised implementation plan based on staff review

# Third Month – Present Implementation Plans to District Leadership

- Present implementation to district staff
- Revise based on district staff input

# Fourth Month – Present to All for Approval

- Present final implementation plan to all constituents
- Start planning implementation of proposed action plans for year 2
- Continue implementation of year 1 actions

***Submit Final Plan to State  
Coordinator***

***(Deadline: \_\_\_\_\_)***

# Next Steps

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- **KEEP MOVING!!!!!!!**
- **REMEMBER – You own the plan!**
- **Schools that make progress:**
  - **Keep moving after this workshop – the next 90 days are critical to success**

## REMEMBER ...

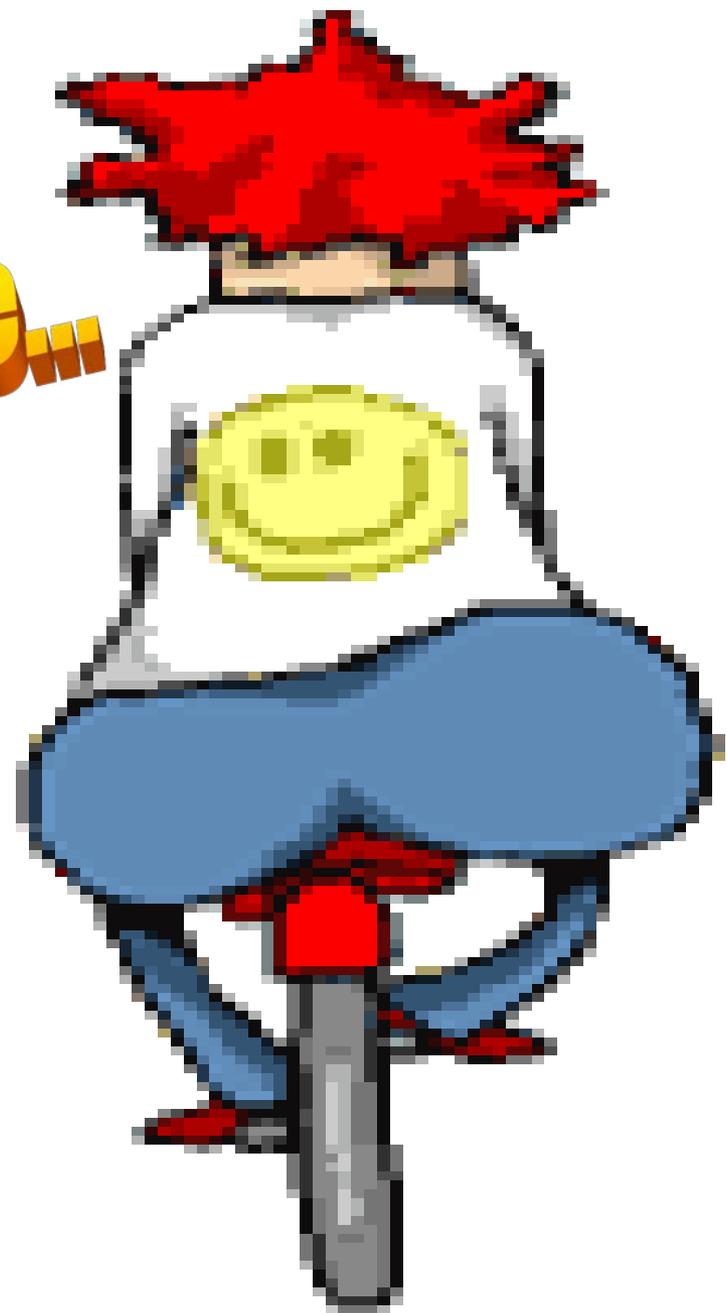
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All schools want to improve but few want to change. The fact remains that to improve, one **MUST** change.

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As we head home...



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**“I leave you with this....”**

**SREB**

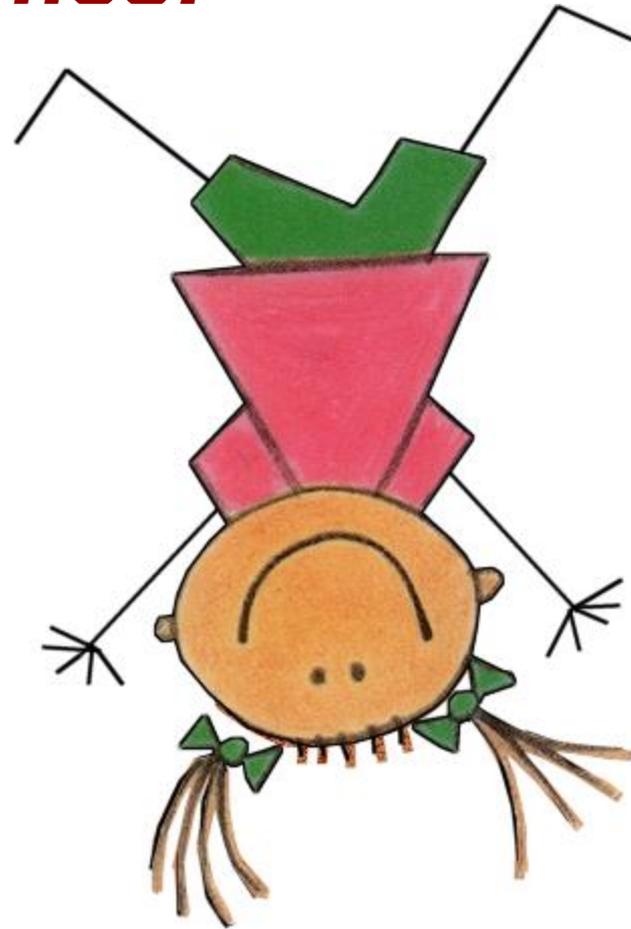


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# Despite all the challenges of implementing *TCTW* -- BE HAPPY



**1. Try everything twice. Let your tombstone read: Tried everything twice...loved it both times!**



***2. Keep only cheerful friends.  
The grouches pull you down.  
(keep this in mind if you are  
one of those grouches;)***

***Remember you may  
have to outlive a few folks  
to get everything done***



**3. Keep learning:**  
**Learn more about the**  
**computer, crafts, gardening,**  
**whatever. Never let the brain**  
**get idle.**

**"An idle mind is the**  
**devil's workshop."**

**And the devil's name is**  
**Alzheimer's!**





## ***4. Enjoy the simple things.***

**5. Laugh often, long and loud. Laugh until you gasp for breath. And if you have a friend who makes you laugh, spend lots and lots of time with HIM/HER.**



**6. *The tears happen:  
Endure, grieve, and move  
on. The only person who is  
with us our entire life,  
is ourselves.***

***LIVE while you  
are alive.***



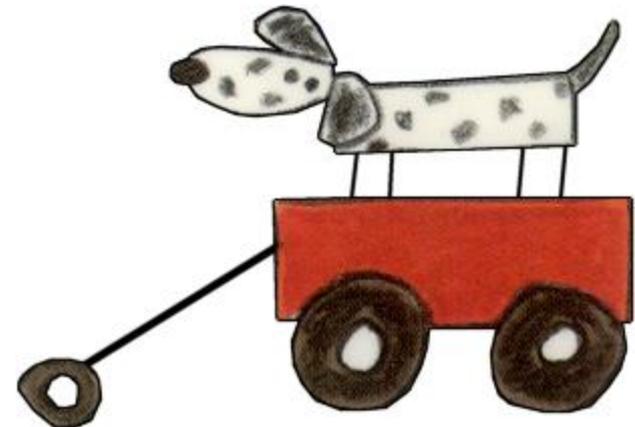
***7. Surround yourself with what you love:  
Whether it's family, pets, keepsakes, music, plants, hobbies, whatever.  
Your home is your refuge.***



**8. Cherish your health:**  
***If it is good, preserve it.***  
***If it is unstable, improve it.***  
***If it is beyond what you can***  
***improve, get help.***

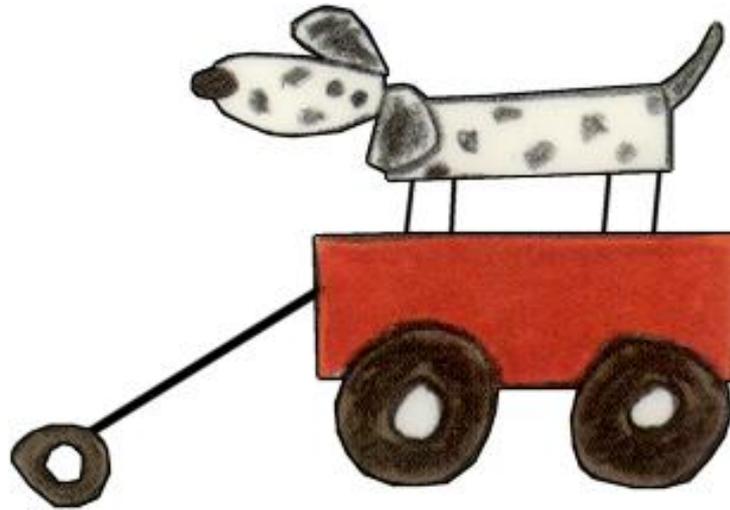
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**9. Don't take guilt trips.**  
**Take a trip to the mall, even to the next county, to a foreign country, but **NOT** to where the guilt is.**





**10. Tell the people you love that you love them, at every opportunity.**

**11. Forgive now those who made you cry. You might not get a second time.**



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**BE HAPPY!!!**

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**HAVE A REAL  
HAPPY DAY  
TODAY!**



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**Enjoy it because you  
got up this morning!  
Enjoy it because you  
get to help students**

**EVERY DAY!**



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# I Salute You!!



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# QUESTIONS??

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If I can provide you with any assistance, please contact:

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