# “Using Locally-Developed Formative Benchmarks and Assessments to Improve Student Learning”

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# History:
# How and Why did we do this?

- North Spencer Initiatives
- Curriculum Mapping
  - Since 1997
  - Corporation-wide effort
  - Subjects:  Math, LA, Science, and Soc. Studies
- Align curriculum with state standards
- Benchmarks (Language Arts and Math only)
- Improve instruction and student learning

# Collaboration – district to district

- Success with ISTEP+ scores
- Attributed to locally created Benchmark Assessment system

# Why? -- Communication

- Communication throughout corporation improves
  - building level and corporation level teachers are discussing (with a common language) standards and student learning
  - no more “if the teacher would have taught you this last year” comments
  - you prepare students for consistent performance for MS and HS learning and performance
- Parents need to know you are aligned

# Why?-- Focus

- Alignment provides focus
  - saves you time
    - you are not teaching other grade level skills
    - you give more in-depth instruction for what is required at your grade level
  - *Curriculum Frameworks* provide you a “road map” to navigate the new Standards
    - provides a multitude of integration and extension ideas

# Why would you want to grow?

- Standards-based instruction is how schools are measured
  - assessments (ISTEP+) aligned
- Consistency from school to school
  - helps transient students
- World has changed
  - doing what we've always done will give us what we've always gotten

# Why? -- Student Learning

- As Indiana teachers we are required to teach to the Standards
  - different from “teaching to the test”
- No longer is education for some/most enough
  - education is for ALL
    - AND we have to prove that EACH student is learning what we teach
      - BUT simply “teaching” is no longer enough

It’s about whether they LEARNED it, not whether we taught it

# How do you create Benchmarks?

- Individually for Math and ELA
  - Based on the grade level state Standards
    - Identify the skills that are typical stumbling blocks for students in your school
    - Identify skills needed for improvement/growth
      - Ex.: Problem Solving, On-demand Writing
  - Keep focus to no more than twenty skills
- As a grade level team
  - Come to consensus on no more than 20 skills
    - Combine/reword common skills
  - Identify which grading period these best fit

# How do you create the Assessments?

- After establishing the Benchmarks
  - Use resource materials to develop Assessments to determine student mastery of each Benchmark
    - These may be in small individual quizzes, large combined tests, oral assessments, observations, etc.
    - All teachers will use the same assessments at relatively the same time of the grading period.
    - Be sure to design assessments that go beyond surface level questioning.
  - Determine how the Assessments are to be scored
    - Include keys and/or rubrics
  - Set the Mastery level expected for the Benchmark Assessment

# Benchmarks VS Formative Assessments?

- What was the difference in the beginning?
- How could we look at this question differently?
- How did the development of Benchmark Assessments better prepare us for Formative Assessments?

# How can Benchmarks improve communication to parents and students?

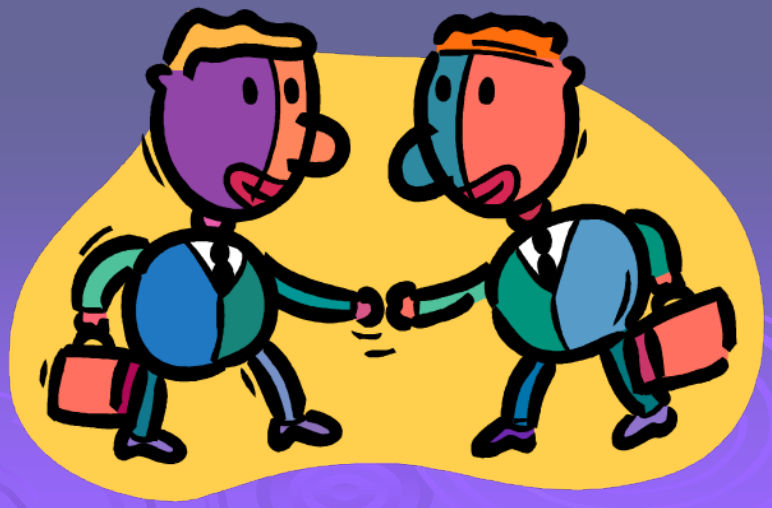
- Great tool for Parent/Teacher Conferences
- Venue to discuss learning with students
- May decide as a corporation to send the Benchmark Checklists home with parents
  - “Refrigerator Curriculum”
  - Parents know what to expect as part of the overall picture of assessment
- Can make connections to ISTEP+ performance

# How do you use Benchmarks and Assessments?

- Each student has a copy of the Benchmark Checklist
- Give the Assessments during the established Grading Period
- Enter the individual student data on the Checklist
- Remediate the skill(s) until the student attains mastery – all the way up until the last day of school
- Pass on the Checklist to the next teacher to communicate successes and concerns
- Enter data
- Discuss data at school-level and corporation-level meetings
  - Data is to inform instruction and not to evaluate teachers!

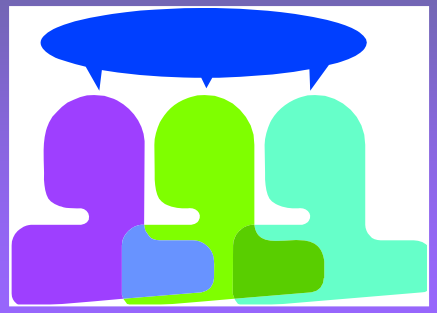
# What other barriers should you consider?

- Initial communication to parents
  - Explain the benefit of the B & A system
- Management and refocusing of time
  - You will probably want to figure the Benchmark Assessment scores into your Progress Report mark decisions
  - When focusing assessment in this way, you may need or want to give up duplicate or less effective assessment of the targeted skills
  - Don't forget to use your *Curriculum Frameworks* as a resource for instruction prior to giving Benchmark Assessments
- Data Collection
  - Who and how to collect the data
- Management of master files
  - Updates
  - Copies
  - New teachers



# Collaborative Work

- Director of Learning and Assessment, Literacy Consultant along with Assistant Superintendent
- Summer work for teachers
- Modeled after North Spencer County
- Elementary Benchmarks for Math and ELA



# Formal Research

# The Problem

## Reform in Education

- NCLB
- Public Law 221
- School Improvement Planning
- Best Practices in Professional Development

# Professional Learning Community

- Collaboration
- Data
- Results
- Interventions

# Purpose of the Study

Would the use of collaborative teacher teams and benchmark assessments improve student achievement in English/language arts and mathematics for students in grades 3-10, as measured by ISTEP+?

# Significance of the Problem

- Era of high stakes and accountability
- Public perception of schools based on AYP determination and category placements
- Research-based tool for improving student achievement

# Literature Review Highlights

Historical perspective

- “Free” school system
- Foundation of a strong democracy
- Common schools (Horace Mann)
- 1950s and Sputnik
- Brown v. Board of Education, equitable education for all
- Title IX and ADA
- *A Nation at Risk*
- Excellence Movement
- Goals 2000
- NCLB

# Literature Review Highlights

Change

- Peter Senge, *The Fifth Discipline*
- Jim Collins, *Good to Great*
- Michael Fullan—capacity, sustainability, the moral imperative

# Literature Review Highlights

Professional Learning Community

- Developed from ideas of many leaders in organizational reform, especially Senge and Fullan
- Related to school setting by Rick DuFour and Robert Eaker

# Professional Learning Community

Characterized by the following tenets:

- Shared vision
- Supportive and shared leadership
- Collective creativity
- Collaboration
- Common assessments
- Focus on results

# PLC Big Questions

1. What is our purpose?
2. If learning is our purpose, then what do we want students to learn?
3. How will we know if they have learned these things?
4. What do we do if they do not learn, and what do we do if they are high ability learners?

# Big Ideas of a PLC

- Collaboration
- Common Assessments
- System of Interventions

# Research Questions

Did teacher collaboration, combined with the use of standards-based benchmark assessments improve student achievement on ISTEP+ in the following areas:

- Math & English/language arts for all tested students
- Math & English/language arts for tested students classified as free and reduced lunch

# Research Design

- IASP list-serve request for schools
- All schools that responded and met criteria were included in the study
- ISTEP+ data from 2 years pre-implementation and all available years post-implementation were collected
- Schools divided into three groups
  - Elementary Schools (K-6)
  - Middle Schools (7-8)
  - High Schools (9-12)

# The Sample

- 31 elementary schools
- 8 middle schools
- 4 high schools
- All from Indiana (95% of schools from central/southern Indiana)
- Mix of urban, suburban, town, and rural schools, with majority coming from urban and rural settings

# The Instrument

ISTEP+

- Initially implemented in 1996; revised and aligned to new standards in 2002, 2004
- GQE for grade 10
- Tests standards from previous grade (fall test)
- Criterion-referenced test, uses Item Response Theory, which provides scale scores

# The Intervention

- Collaborative teacher teams
- Commonly used, standards-based benchmark assessments in English/language arts and mathematics

# Data Collection

- Schools divided into type
- Data collected for all students and for students eligible for free and reduced lunch for both English/language arts and mathematics (12 null hypotheses)
- ISTEP+ data from grades 3, 6, 8, and 10 were collected
- Data collected were averages percentages passing ISTEP+

# Null Hypotheses

1. There was no difference in performance on the English/language arts portion of the ISTEP+ test for all tested students in grades 3-6 prior to the implementation of collaborative teams and benchmark assessments and following the implementation.
2. There was not difference in performance on the English/language arts portion of the ISTEP+ test for free/reduced lunch students prior to the implementation of collaborative teacher teams and benchmark assessments and following the implementation.

# Null Hypotheses Table

| School Type | Population | Subject |
|---|---|---|
| Elementary | All Students | ELA |
| Elementary | Free/Reduced | ELA |
| Elementary | All Students | Math |
| Elementary | Free/Reduced | Math |
| Middle School | All Students | ELA |
| Middle School | Free/Reduced | ELA |
| Middle School | All Students | Math |
| Middle School | Free/Reduced | Math |
| High School | All Students | ELA |
| High School | Free/Reduced | ELA |
| High School | All Students | Math |
| High School | Free/Reduced | Math |

# Statistical Analysis


- Data analyzed using the *t* test for independent samples
- Gay & Airasian (2003) – used to determine whether or not 2 means are significantly different at a selected probability level
- Probability level of .05 was used to determine significance
- Data analyzed with SPSS Graduate Pack 14.0 for Windows

# Summary of Null Hypotheses with Results

| School Type | Population | Subject | Rejected/Retained |
|---|---|---|---|
| Elementary | All Students | ELA | Rejected |
| Elementary | Free/Reduced | ELA | Retained |
| Elementary | All Students | Math | Rejected |
| Elementary | Free/Reduced | Math | Retained |
| Middle School | All Students | ELA | Retained |
| Middle School | Free/Reduced | ELA | Retained |
| Middle School | All Students | Math | Rejected |
| Middle School | Free/Reduced | Math | Rejected |
| High School | All Students | ELA | Retained |
| High School | Free/Reduced | ELA | Retained |
| High School | All Students | Math | Retained |
| High School | Free/Reduced | Math | Retained |

# Conclusions

- Statistically significant improvement was found in elementary students (all tested students group) for both ELA and math
- Statistically significant improvement in free/reduced lunch students was not consistently found
- Statistical significance in improvement was more likely to be found in mathematics than in English/language arts

# Elementary Schools

- Significance was found in elementary school students in English/language arts at the .001 level
- Significance was found in elementary school students in mathematics at the .02 level

# Why Elementary Schools?

- Student-centered
- Flexible schedule
- Variety of assessment strategies
- Early intervention

# Issues Related to Results

- Background knowledge impacting free/reduced lunch students
- Mathematics versus ELA instruction
- Mathematics versus ELA test items
- Levels of implementation of collaborative teams

# Recommendations

- Replication of study
- Expansion of study to include more schools, especially at the middle and high school levels
- Expansion of study to include a broader geographical area
- Adaptation of study to look at vertical data rather than trend data—track the same group of students over time

# Summary

- Collaboration of districts
- Benchmark Assessment System Success
  - Professional Learning Communities
  - Communication
- Next Steps
  - Standards-based Progress Reports
  - Scaffolding of Problem Solving and Comprehension strategies