

Saleh Al-shomrani
CS dept., Kent State University
salshomr@cs.kent.edu

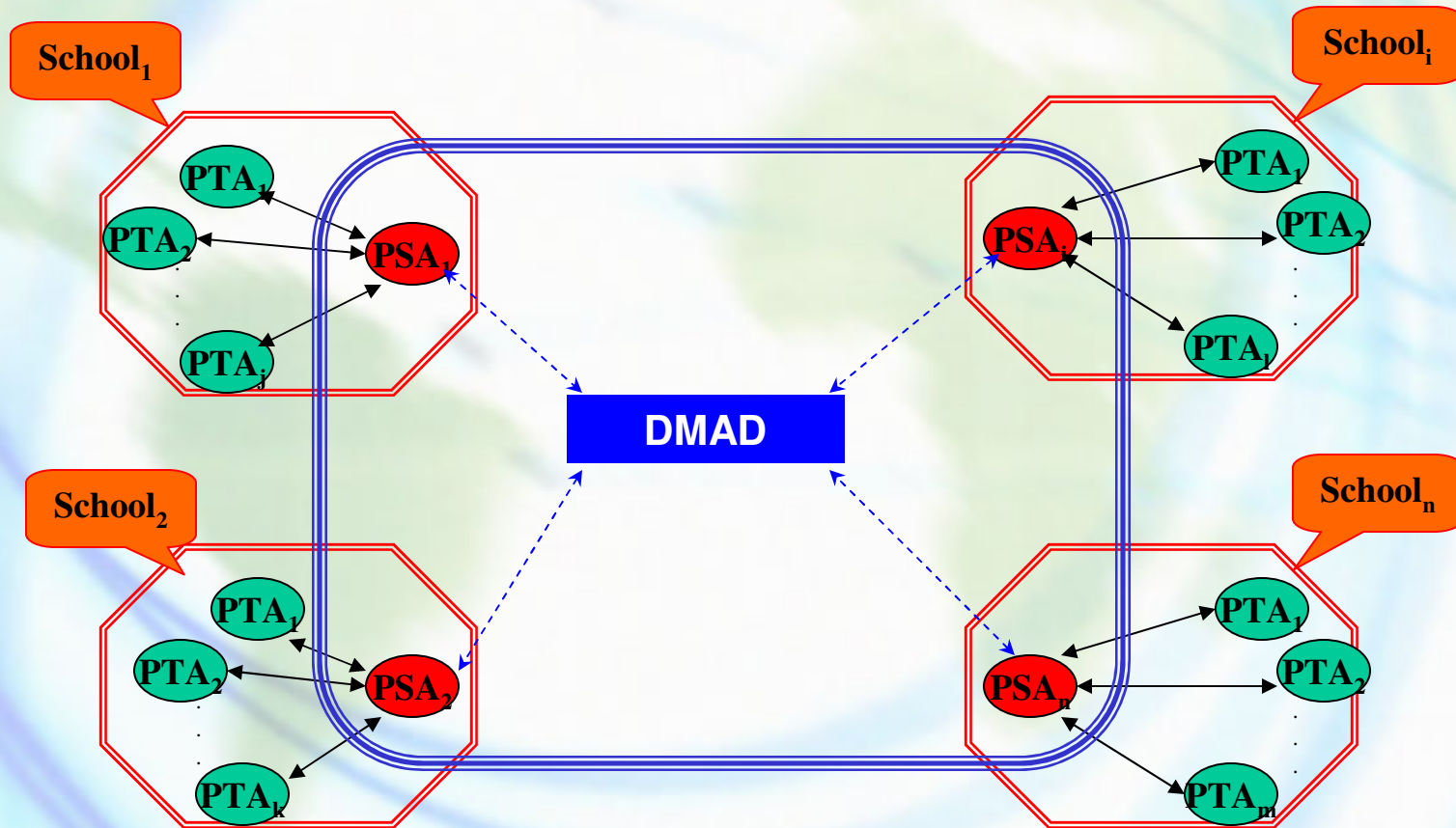
Distributed Mathematics Assessment Databases: (DMAD)

Status Report and Demo

Outlines

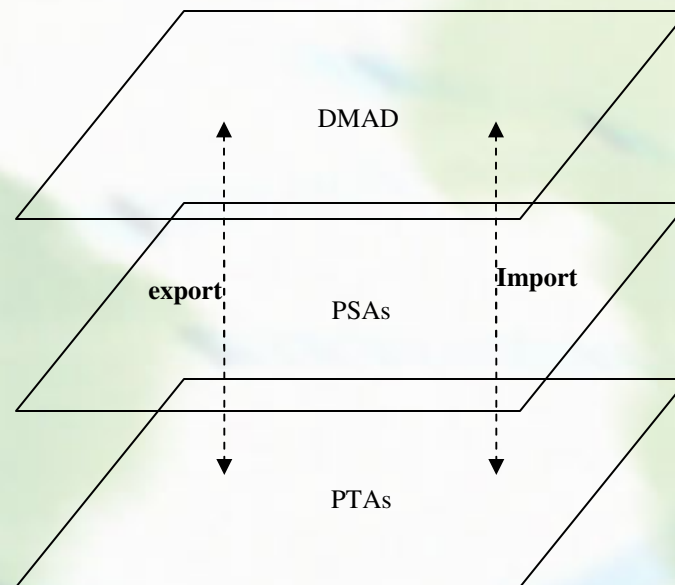
- **DMAD Organization Overview.**
- **DMAD Local/Global views.**
- **Managing Assessment Tests.**
- **Automatic test grading (changes).**
- **Security of online testing.**
- **DMAD as a Web Service.**
- **Issues and Future work.**
- **Implementation and Q & A.**

DMAD Organization Overview



DMAD

DMAD Visualization



DMAD Views



(1) Local Picture/View

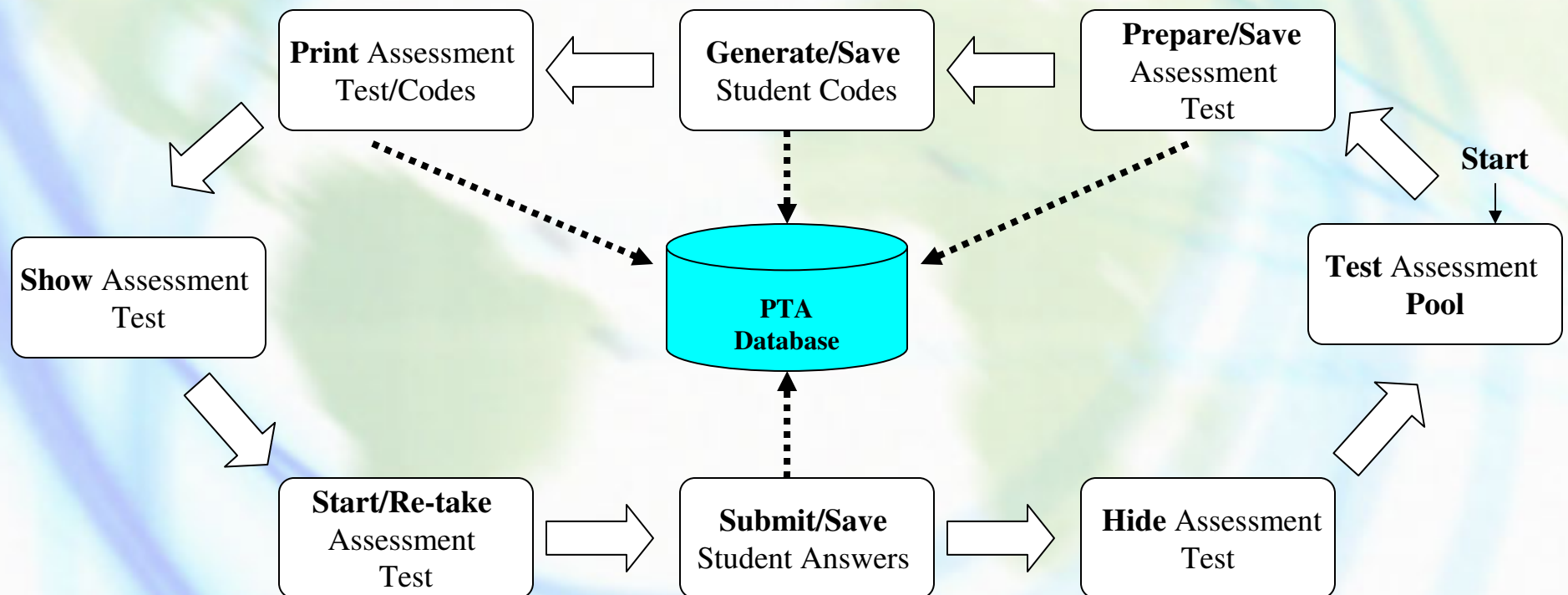
- Authoring tool for teachers (author/view/edit/delete questions).
- Security of online Testing (using especial per-test 'test codes').
- Managing Assessment Tests (prepare/save/show/hide/re-take/print tests).
- Automatic test grading (statistics).
- Storing/Retrieving student's answers.

(2) Global Picture/View

- DMAD as a whole as a huge collection/bank of questions.
- Importing/Exporting assessment questions.
- Searching DMAD.
- Adding/Deleting PTAs from DMAD.
- Support Web services (XML).
- etc.

Local Picture/View

- Managing Assessment Tests



Automatic test grading (changes)

➤ **Old way:**

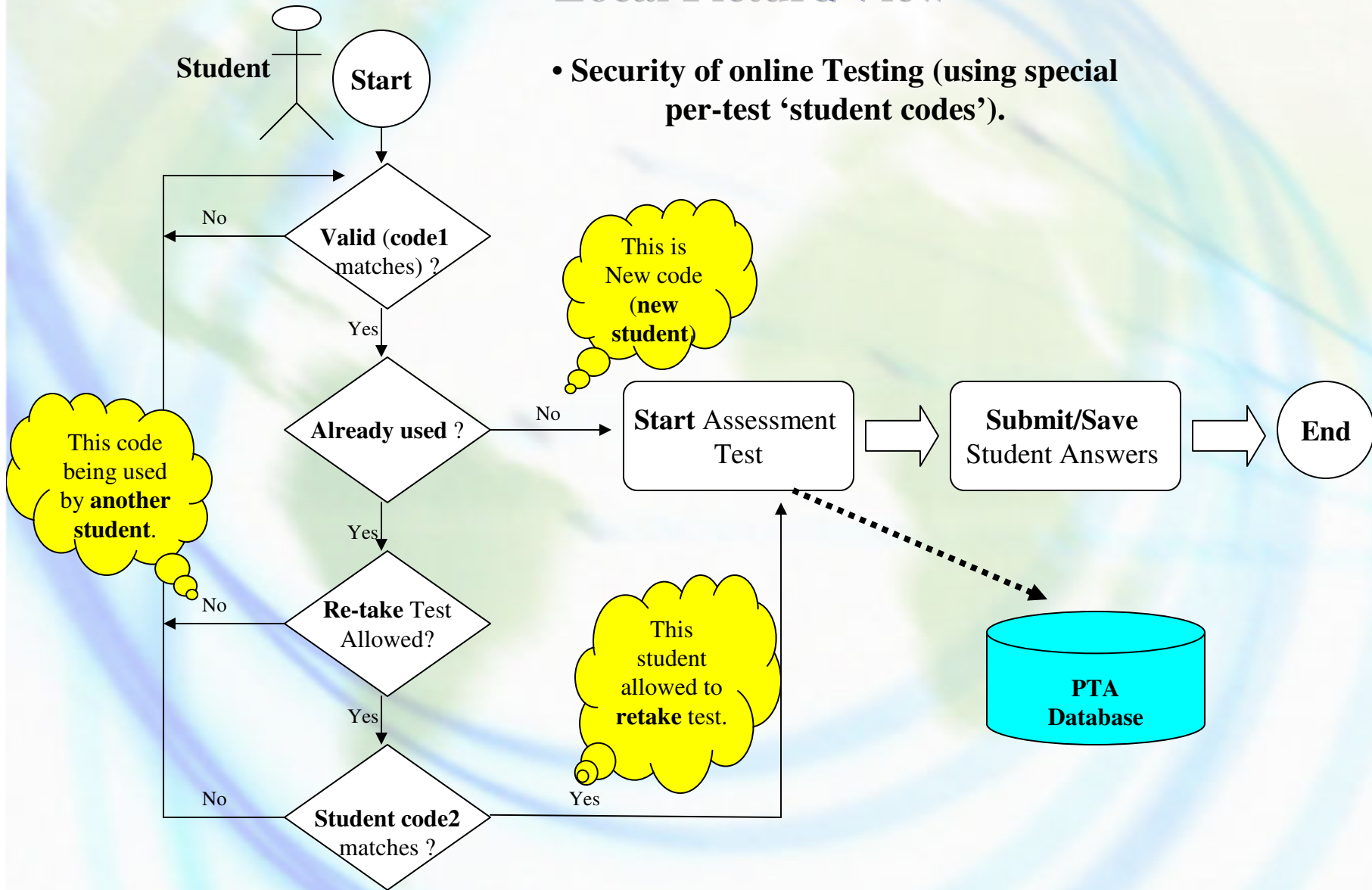
- ✓ Student submits his/her answers for assessment test questions all at once.
- ✓ May lose her answers if problems happen before she submits (e.g. close window, etc.).
- ✓ No accumulative submission of student answers.
- ✓ Automatic grading is done when student submits her answers immediately.
- ✓ Not using test codes.
- ✓ No Test Re-take!

➤ **New way:**

- ✓ Using accumulative submission of student answers.
- ✓ Automatic grading is done before the teacher reviews student grade.
- ✓ It uses 'test codes' uniquely/randomly generated for students as login system.
- ✓ 'Test Re-take!' is supported and controlled only by the teacher.
- ✓ Support test/codes print out.

Local Picture/View

- Security of online Testing (using special per-test 'student codes').



DMAD as a Web service

- **Multiple choice example:**

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet type="text/css" href="dmadlink.css"?>
<dmad xmlns:xlink="http://www.w3.org/1999/xlink">
  <question>
    <question_head>
      <text>Solve the following formula</text>
      <image xlink:type="simple" xlink:show="new"
        xlink:href="q10.jpg">question image</image>
      <svg>svg geometry</svg>
      <formula>svg geometry</formula>
      <type>Multiple choices</type>
    </question_head>
    <question_body>
      <option>choice1</option>
      <option>choice2</option>
      <option>choice3</option>
      <rubric>choice3</rubric>
    </question_body>
  </question>
</dmad>
```

DMAD Issues and Future Work

➤ **Integration with WME:**

- ✓ Using same **WME login system**.
- ✓ Give **Reasoning** for student mistakes, and their **remedy (links to TMs and TLPs)**.
- ✓ Providing some kind of a **Web service** (ex: export a question as an XML file to other WME parts).
- ✓ DMAD uses geoSVG tool, to be included.
- ✓ Supporting formulas using MathEdit tool.

➤ **DMAD Search?**

- ✓ How do we search? Speed? If some participating school sites down?

➤ **Populating/Updating shared (Replicated) data** between

PSAs. (ex: school table):

- ✓ Add/delete school site to/from DMAD?

Issues and Future Work (Cont.)

Other Issues

- Using the idea of **Shopping cart** for importing questions.
- **Conversion** between question types.
- **Adding** new question types.
- It should support **Math formulas** in any question of any type (using WME MathEditor).
- **DMAD Administration:**
 - ✓ Who will the Administrator(s)?
 - ✓ What privileges should they have?

Implementation

- **Take a look..**

<http://wme.cs.kent.edu/kimpton/assessment/>



Q & A