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WME As A D3A2 Resource

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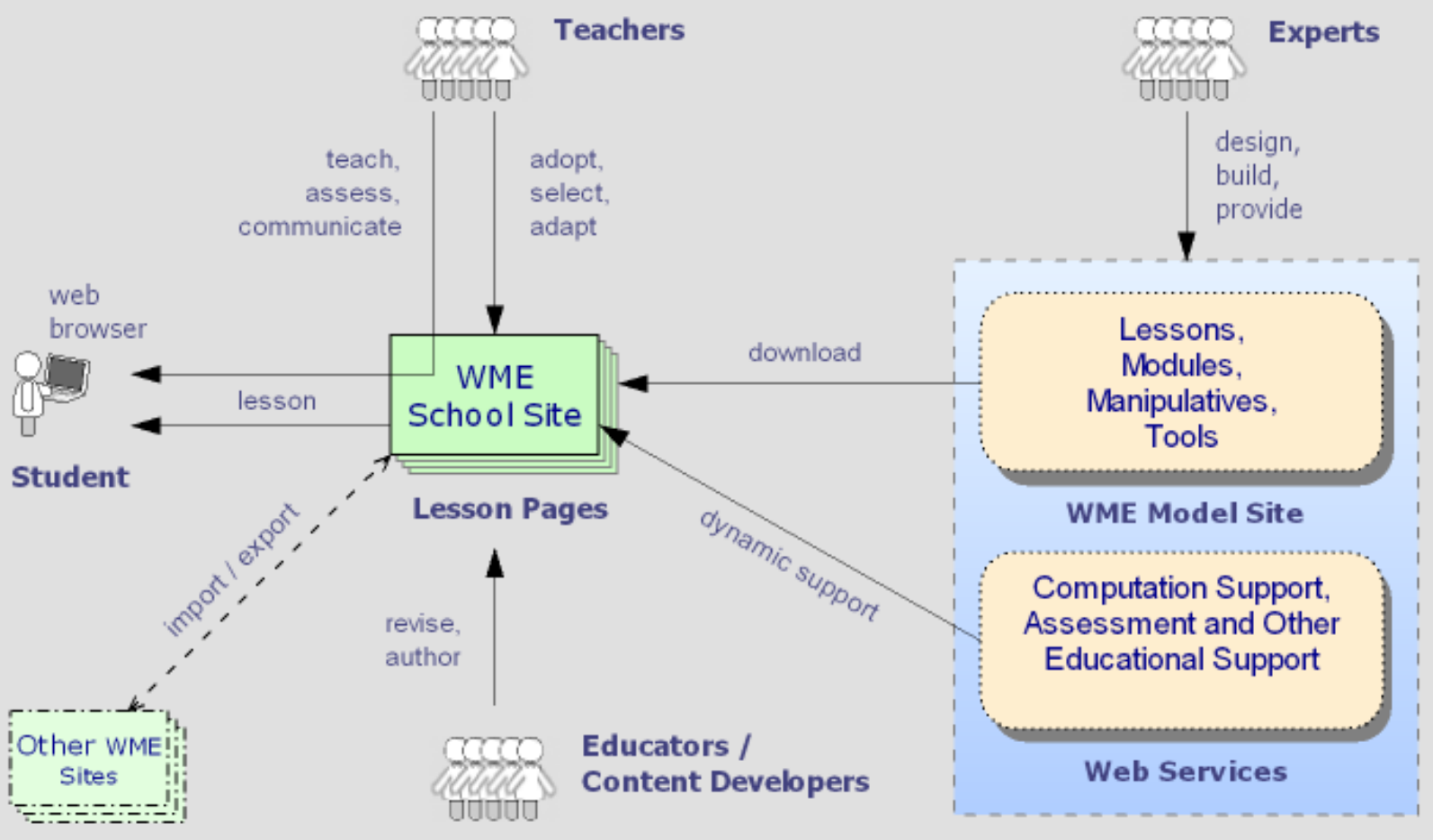
The WME Concept



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WME Project at kent State University

- Paul's ICM WME group started research around 2000
- Michael and students from College of Education joined the WME effort in 2003.
- Obtained OBR Research Challenge support for 2004.
- Built website, piloted modules and lessons at Kimpton Middle and added many collaborators, and published papers.
- Exploring collaborations with ORC and ODE (2006)
- WME project site: `wme.cs.kent.edu`

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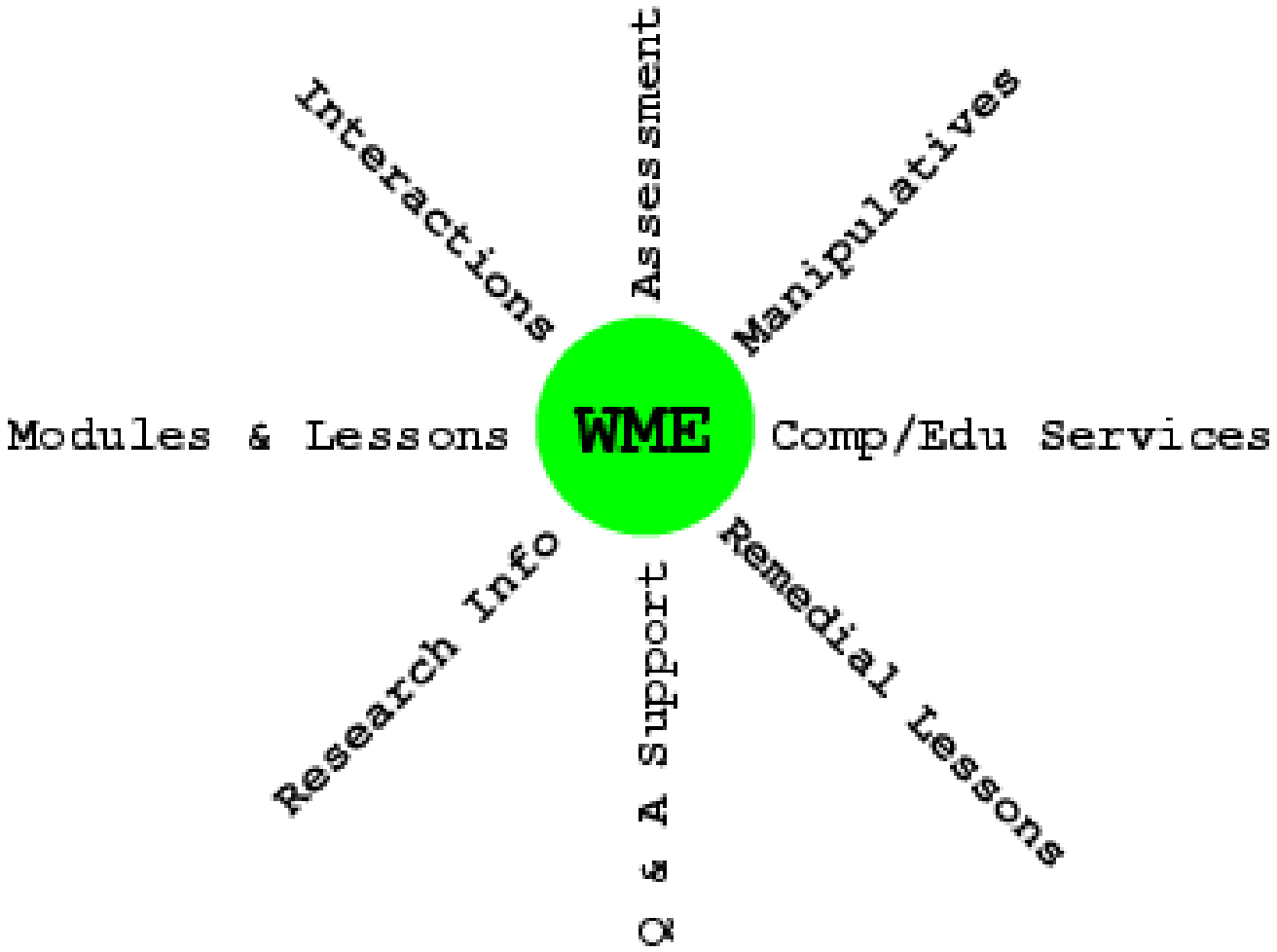
The WME Integration



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WME Supports D3A2 Goals

- Classroom-ready lessons aligned with standards supplemented by teacher guides saves time for teachers.
- Interactive manipulatives and hands-on learning improves instruction.
- Wide accessibility through the D3A2 network can raise student achievement state-wide.

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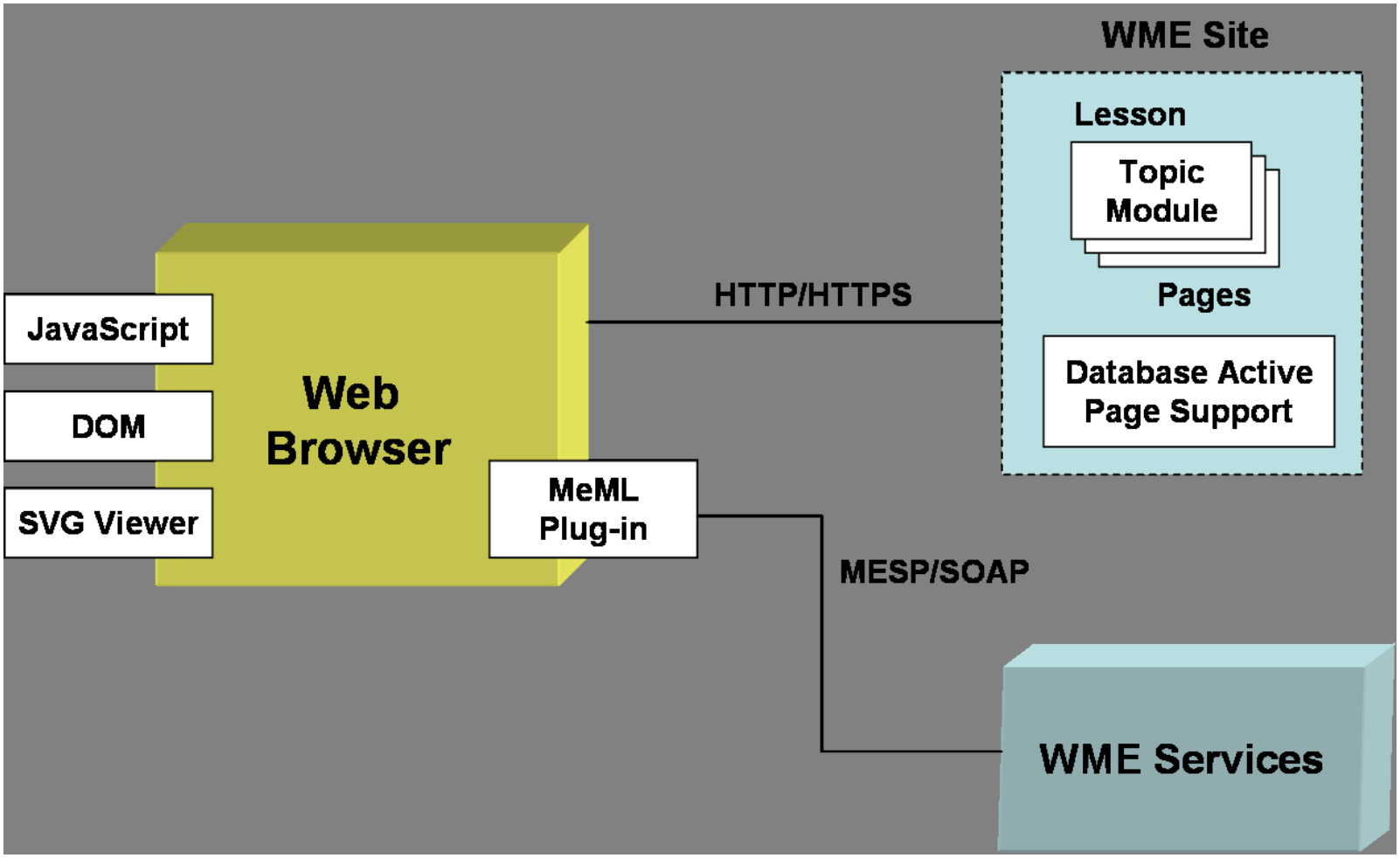
Technical Compatibility of WME with D3A2

- Open-source, interoperable and compliant to open standards.
- Leading-edge support for mathematics: formula representation, editing, and display; interactive geometry; graphing/plotting; animation.
- Interactive, integral, self-contained, and classroom-ready.
- Running on Linux servers with Apache, PHP.
- Using Javascript and SVG supported by popular Web browsers.

The WME Architecture



WME Components

- *Manipulatives*, *Active Lessons* and *Topic Modules*
- Teacher guide and assessment support
- Client-side Support—regular browsers, javascript, SVG viewer, DOM, browser plug-in.
- Server-side Support—active pages, database
- Content-markup Support—MeML, page translation and MESP service access.
- WME Services—MathGlossary, MathChat, MathBoard, ...
- Protocols—MESP, MCP and SOAP/REST.

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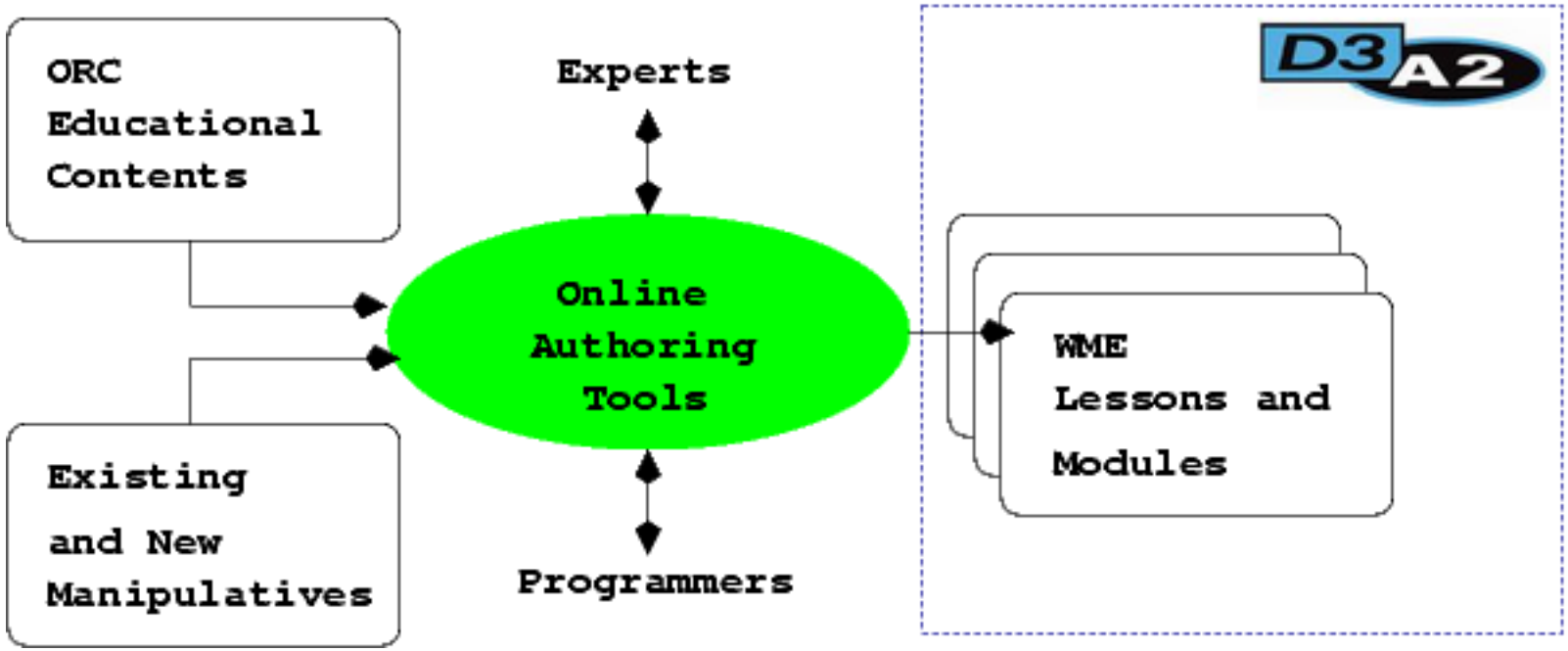
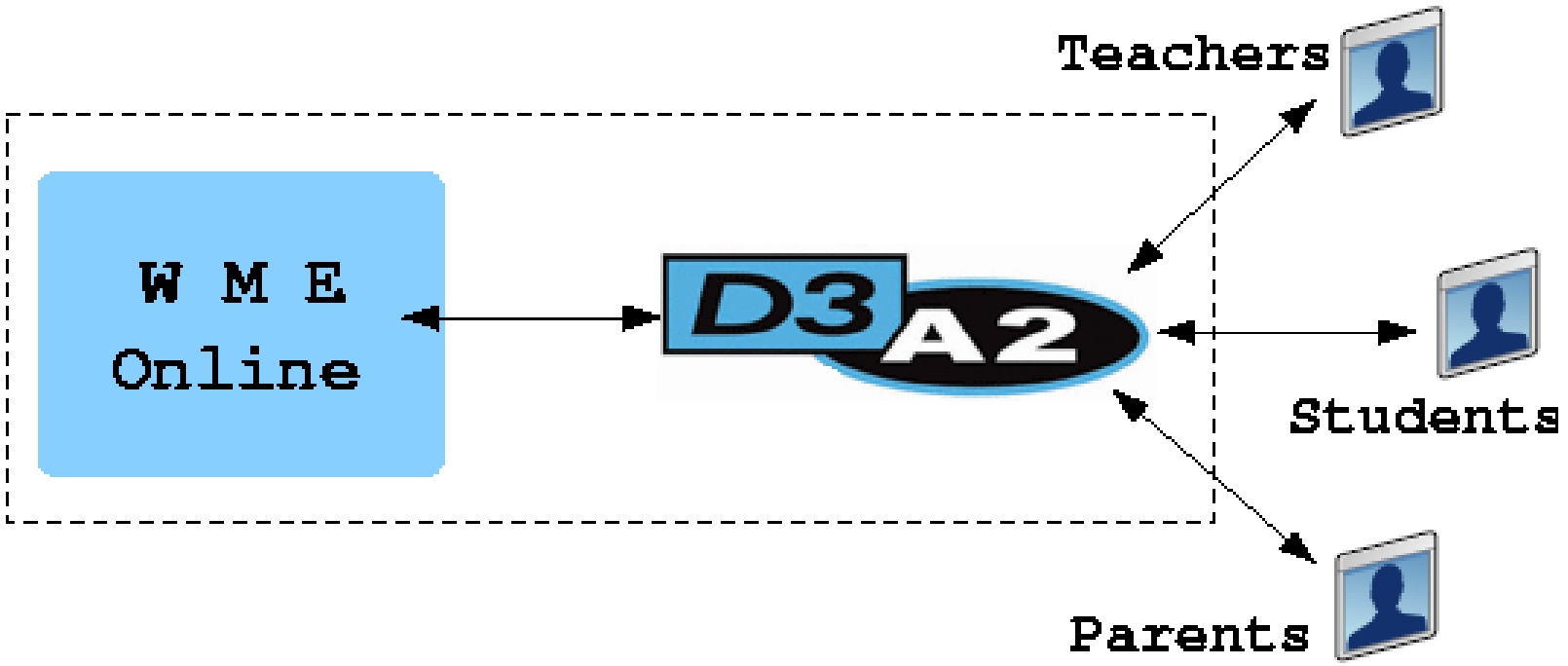
Collaboration



Usage Interface



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WME Online for D3A2

- Building modules, lessons and manipulatives
- Adding standard indicators, teacher guides
- Adding classification data to lessons and modules
- In-school piloting of modules and lessons
- A search capability to find modules and lessons quickly
- Making an open access "WME Online" website for interfacing to D3A2

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Partners

- Ohio Department of Education (ODE)
- Ohio Board of Regents (OBR)
- Ohio Resource Center (ORC)
- College of Education, Kent State University
- Institute for Computational Mathematics (ICM), Kent State University
- Kimpton Middle School, Munroe Falls (and other schools)