

# KETS Architecture Principles

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## Introduction

The following principles are used to guide KETS solution design by helping ensure that KETS is “doing the work right”. They serve as standard requirements and are considered in combination with the specific business requirements of each project. Any given solution may violate (or not fully meet) one or more of these principles, but only for good reason and with explicit approval of the project sponsor.

## Principles

- 1) Equitable: Solutions should provide equal value and benefit to schools and districts regardless of local budgets, existing equipment and software, geographical location, or organization size.
- 2) Always On, Anywhere, Anytime, Any Device: Solutions should be available and supported 24/7, be accessible from a wide range of devices, and be accessible from any physical location.
- 3) Supportable: Solutions should use equipment, software and services that are efficiently supportable and manageable by both KETS staff and the responsible vendors.
- 4) Learning First: Solutions should prioritize instructional and learning needs above administrative needs.
- 5) Partners Involved: Solutions should make maximize partner accountability by making all possible use of partner capabilities for development, infrastructure, ongoing operations and support.
- 6) Education Driven: Solutions should cost-effectively meet a well-defined educational/programmatic/administrative need of KY districts and/or KDE.
- 7) Up-to-date: Solutions should use leading-edge technologies and offerings.
- 8) Measurable: Solutions should provide easy-to-use mechanisms to report on system usage in business terms.
- 9) Integrated: Solutions should integrate with existing KETS infrastructure while aligning with KETS strategy for the future.
- 10) Usable: Solutions should be easy, efficient and pleasant to use for their target user populations.
- 11) Secure: Solutions should protect confidential data, their own integrity, and the KETS environment against accidental or malicious damage.
- 12) Cloud: Solutions should be based on Cloud offerings (ideally SaaS).
- 13) Extensible: Solutions should allow tailoring for unique per-district requirements.

## Background & Justification

- 1) Equitable: KETS was founded in support of KERA (the Kentucky Education Reform Act of 1990), one of whose objectives was to provide more equal opportunities to students in districts with

fewer resources. It remains important that KETS strategies and solutions support smaller and poorer districts.

- 2) Always On, Anywhere, Anytime, Any Device: There will always be niche devices that solutions cannot support, and niche solutions for which broad device support is not worthwhile. However, it is important – especially for educator and student-facing solutions – to support diverse educational strategies and methods by making systems available on a broad range of device and at all hours.
- 3) Supportable:
  - a. Supportability includes characteristics such as
    - i. Widespread usage to ensure a pool of experienced potential staff
    - ii. Good usability for administrators
    - iii. Strong vendor support
    - iv. Good training and documentation
  - b. Manageability includes characteristics such as
    - i. Centralized reporting on system health and status
    - ii. Centralized configuration and updates
- 4) Learning First: While every KETS solution should in some way support the educational enterprise, some important and strategic systems will be used largely or completely by administrators and support staff as opposed to teachers and students. Nevertheless, student learning is the first priority of the Department of Education and of KETS.
- 5) Partners Involved: KETS relies on partners as a force multiplier, allowing Kentucky districts and schools to benefit from the skills, knowledge, facilities and systems of partners as well as KETS itself.
- 6) Education Driven: KETS solutions should be driven by the priorities and strategies of the Kentucky Board of Education and school districts.
- 7) Up-to-date: Because KETS solutions are typically in place for many years, we prefer to implement technologies fairly early in their life cycle to get their maximum benefit.
- 8) Measurable: Measurements of system usage – who, when, where, how much, using what features, using which clients – are important for determining system value and planning for changes.
- 9) Integrated: Solutions must strike a balance between supporting current KETS components and fitting well with expected future components. Sometimes the oldest or least common existing components cannot feasibly be supported.
- 10) Usable: While formal usability testing may not always be feasible, it is always worth spending some time during procurement, design, and implementation to ensure that a solution is as easy to use as possible. Systems that are (or appear to be) difficult or time-consuming to use will not be used, or at least not used to their full potential, resulting in a significant waste of effort and resources.
- 11) Secure: The overall security and integrity of KETS and of student and staff data cannot be unduly put at risk.
- 12) Cloud: KETS has a strong preference for cloud offerings to reduce reliance on KETS staff for operations and increase availability.
- 13) Extensible: District autonomy across enterprise solutions needs to be balanced with vendor supportability. There are occasions, in order to support a district's specific technical requirement, for which the extensibility of a solution to allow for supported customizations or tailoring is needed.