



From Monitoring Student Performance to Measuring Educational Productivity

The rocky road from student information and human resource systems to school and teacher productivity

Teacher Incentive Fund Purpose

To support programs that develop and implement performance-based teacher and principal compensation systems in high-need schools

(Department of Education Appropriations Act, P.L. 109-149)

Program Goals

- Increase teacher and principal effectiveness and thereby improve student achievement
- Reform teacher and principal compensation systems so that teachers and principals are rewarded for increases in student achievement

Program Goals (continued)

- Increase the number of effective teachers teaching poor, minority, and disadvantaged students in hard-to-staff subjects such as math and science
- Create sustainable performance-based compensation systems

Eligibility

- Local education agencies (LEAs), including charter schools that are LEAs in their state
- State education agencies (SEAs)
- Partnerships of (a) an LEA, an SEA, or both, and (b) at least one nonprofit organization

Current Grantees

- Various stages of implementation and evaluation
- Mix of entities
- Demographically and geographically diverse
- Range of compensation models

Center for Educator Compensation Reform

- **Established by U.S. Department of Education to:**
 - Support TIF grantees through TA
 - Raise public awareness of alternative and effective strategies for educator compensation reform
 - Monitor program progress

Partner Organizations

- Westat
- Vanderbilt University
- University of Wisconsin
- Learning Point Associates
- Synergy Enterprises, Inc.

Center for

Educator Compensation Reform



Macroergonomics of educator compensation reform

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Benefits of a macroergonomic approach to educator compensation reform

- Enhance student, school, and district performance
- Positively affect the efficacy of instructional design factors in the learning environment

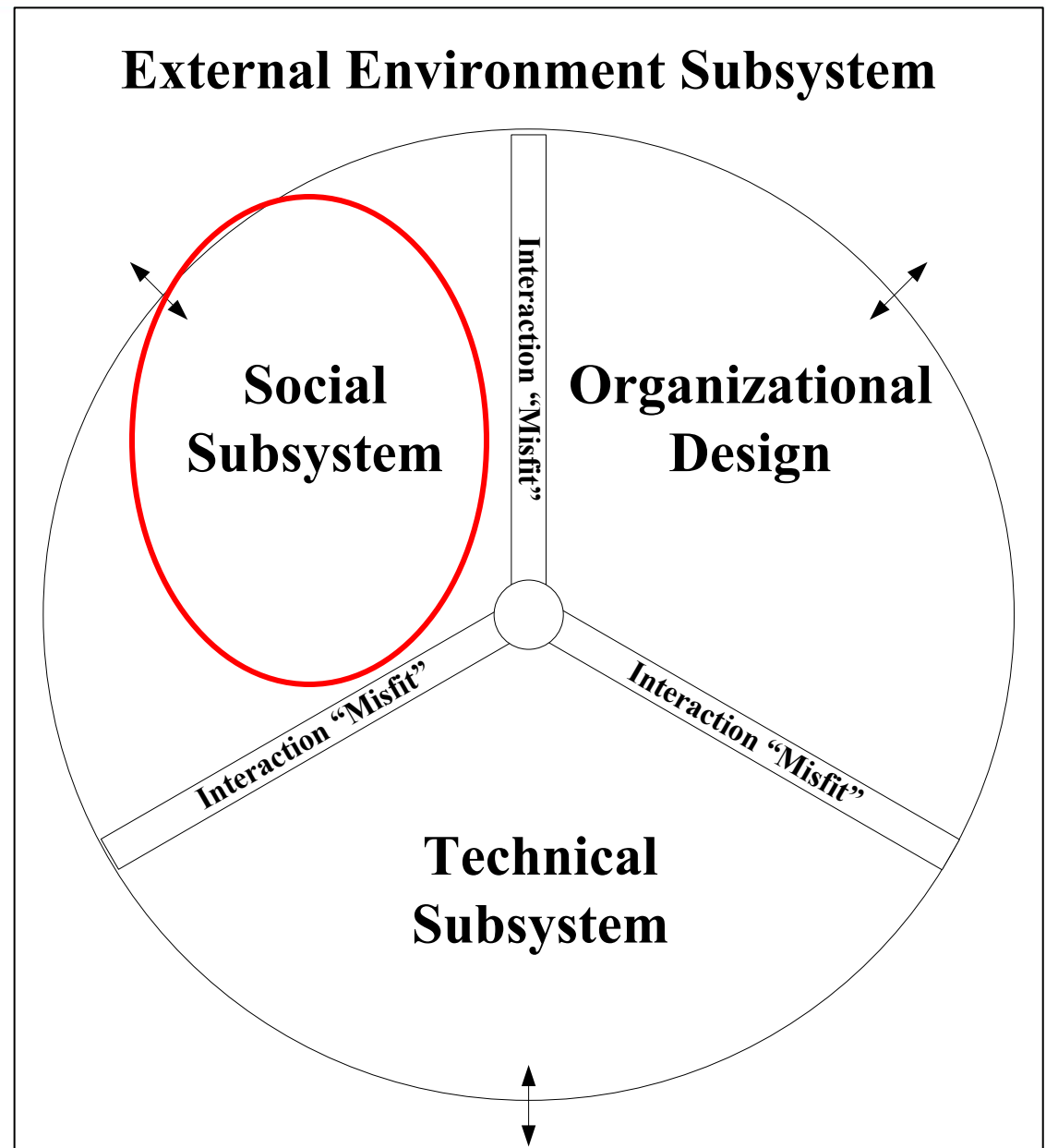
What is macroergonomics?

- **Focus:**
 - organizational design and management
 - human factors and ergonomics
 - work system design
 - human-organization interface technology
- **Goal:**
 - Improve work system performance through design principles and empirical science
 - 4 subsystems
 - technological, personnel, external environment, organizational design

- Adapted from Macroergonomic Technical Group statement of purpose for the Human Factors and Ergonomics Society (www.hfes.org).

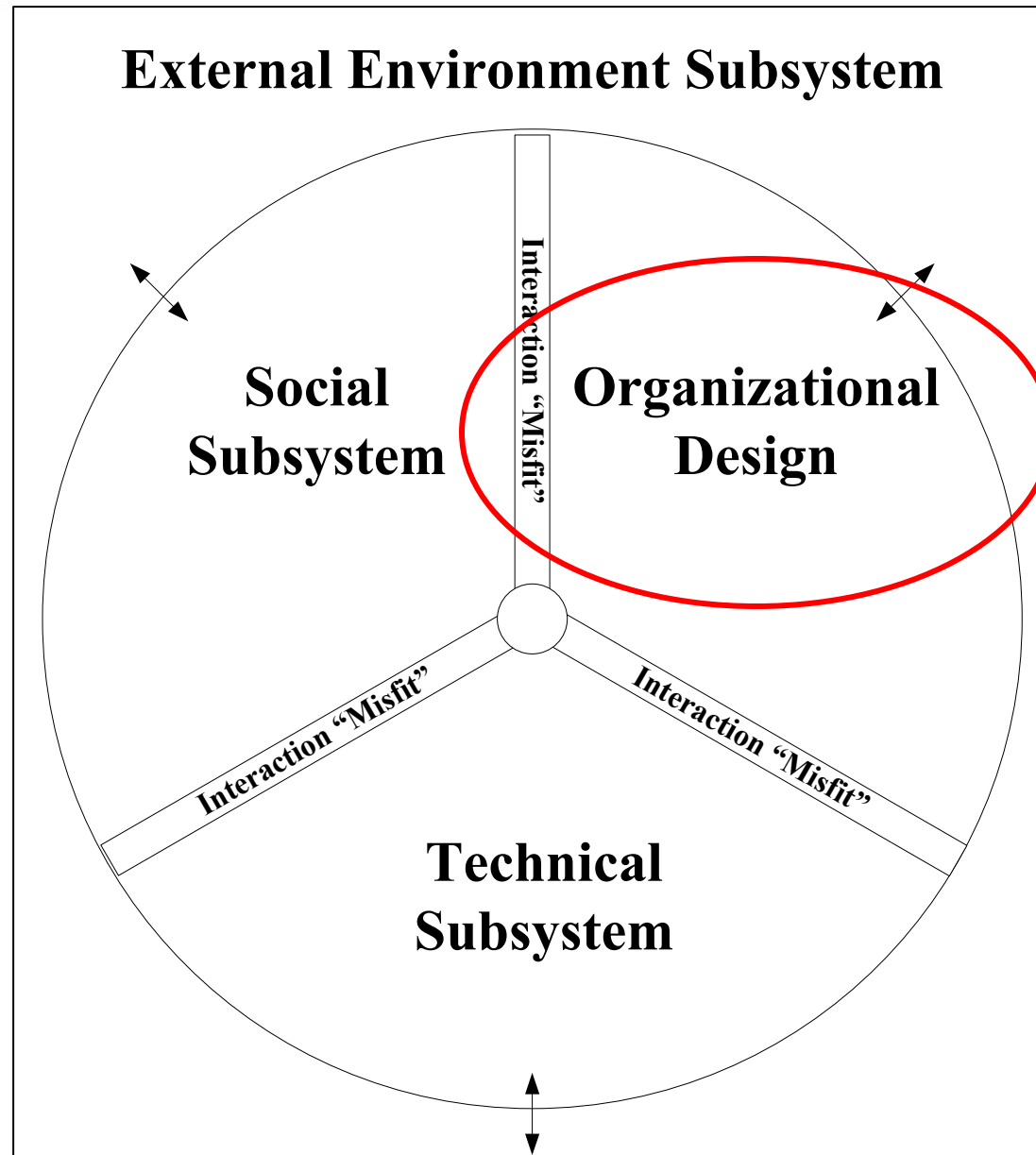
Framework for Educator Compensation Reform

- Framework substantiated with CECR 34 grantees (over 50 school districts)
- Framework adapted from Kraemer and Carayon (2005)



Social subsystem: multiple user groups, uses

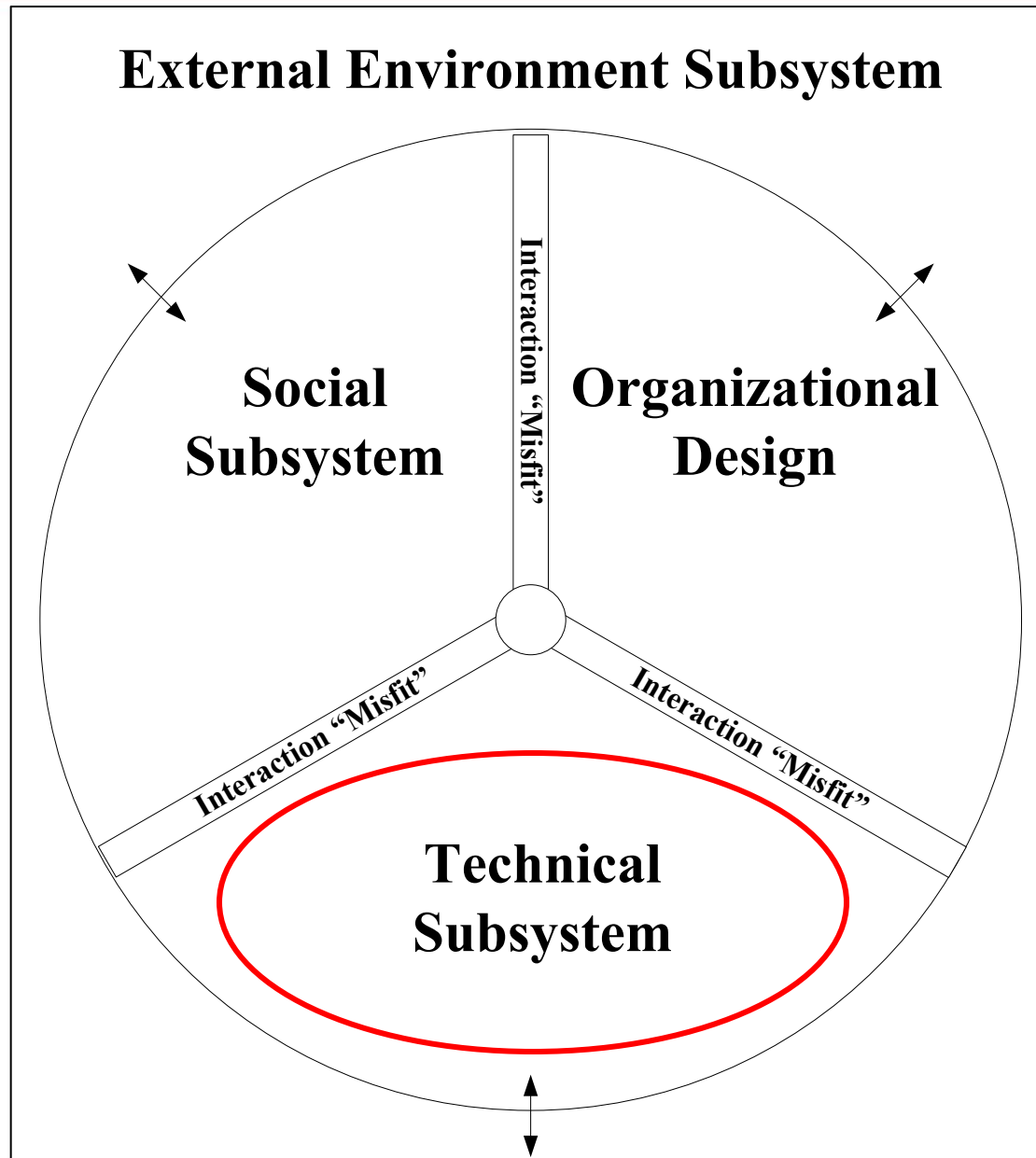
- **Students**
 - Accurate/fair testing, student-teacher link
- **Teachers/Teacher unions**
 - Differential compensation, individual sanctions
- **District-level administrators & researchers**
 - Data analysis needs, high-stakes decision-making
- **State- and federal-level entities**
 - Educational standards, accountability mechanisms



Organizational subsystem: Organizing for program reform

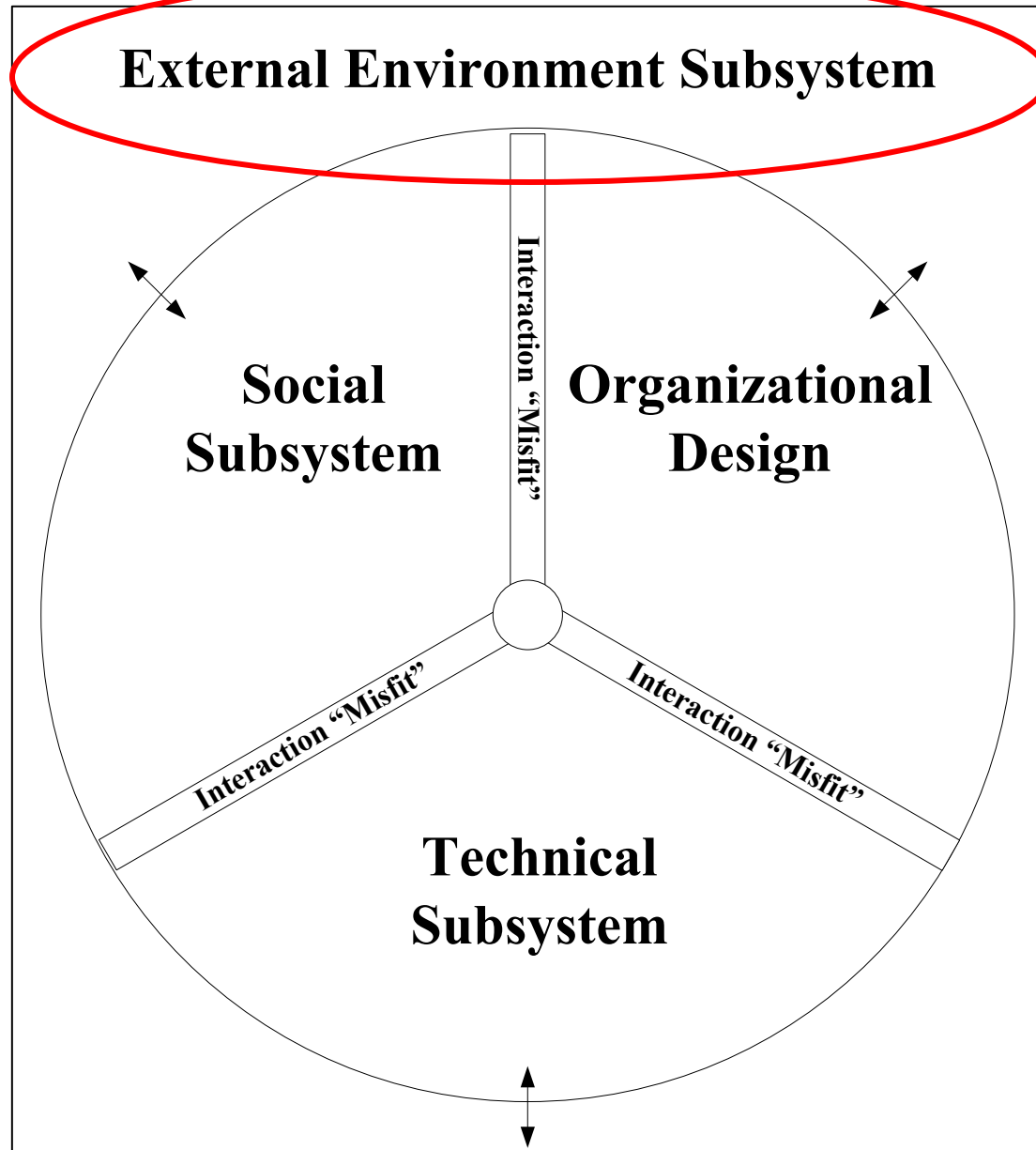
- **Characteristics**

- Strong governance
 - Measurable goals/benchmarks, cross-disciplinary teams
- Elicit a broad set of user requirement and needs
- Strong leaders and process ownerships
- Short- and long-term school and district needs
- Communication plans



Technical subsystem

- Measurement and performance management (Chris Thorn)
 - Teacher, student, classroom, course, grade, school, district
 - Communication implications
- Data quality (Chris Thorn)
- Data warehouses for decision support



External environment subsystem

- **Characteristics of schools**
 - Public institutions
 - Support, funding, and accountability mandates are mainly from public entities
 - Funding usually has specific aims
 - (e.g., free and reduced lunch, grant-supported projects)
 - Implications for prioritization of initiatives, procurement of future funds
 - e.g., CECR funding ends in 2009

Example of poor macroergonomic design: Data warehouse

- Design of data warehouse in large urban district
 - Information Technology Department - owners
 - Lack of governance structure with research office
 - Unspecified analytic needs, user requirements
 - Lack of data quality plan
 - Final design did not support district use
- Redesign: Research Office are principal “owners”

Conclusion

- Program designs should incorporate macroergonomic principles
- Catalogue of “misfits” among the subsystems
 - Design recommendations
- Link performance outcomes to sub-system design
 - Clear, defined, measurable goals



So....How's This Actually Working Out on the Ground?

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Core Information System Gaps

- Many HR systems do not handle multiple roles well
- Student information systems focused on managing student-teacher ratios rather than learning
- IT and Research offices understaffed
- Decision support systems poorly designed

Address IT System Gaps

- HR models need to move toward managing human capital.
- LMS provides correct core links - Integration versus building out SMS
- Labor & software costs may favor piecemeal approaches
- Feedback systems overtaking accountability as decision resource

Data Quality Problems

- Poor links between students and teacher
- Limited data linking teachers to students by subject taught
- Little systematic data on system inputs
- Limited support for performance evaluation systems

Quality Fixes from the Field

- Grade book applications
- Diagnostic test banks with real time analysis
- Annual surveys to confirm linkages
- Develop tracking for PD and use of tools for measuring enacted curriculum
- Outsourced data collection systems

Analytical Gaps in Accountability

- VA Models are haaaaaaaard
- Tests given in mid-year complicates assignment of productivity
- Lack of vertical scales complicates measurement of productivity
- Lack of links to licensure systems complicates assessment of changes in teacher characteristics

Policy Responses Quality Gaps

- Opening up the VA box
- Reexamination of testing windows and inclusion of quarterly diagnostics
- More attention to the interpretability of test results for productivity uses
- Value of inputs to educational systems rethought (including links to teacher preparation systems)

For More Information

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