

RESEARCH AREA & SOURCE	DESCRIPTION & MAIN FINDINGS / ARGUMENTS
<p>Curriculum Implementation / Interdisciplinary Curriculum</p> <p><i>American Educational Research Journal</i> Vol. 44 No.4, pp. 1002 - 1039</p>	<p>Applebee, A., Adler, M. & Flihan, S. (2007) Interdisciplinary curricula in middle and high school classrooms: Case studies of approaches to curriculum and instruction.</p> <p>The researchers examined 11 interdisciplinary teams involving 30 teachers and 542 students in schools in New York and California. They were interested in (a) examining the curricular differences between the programs (b) examining the relationship between types of instructional practices and interdisciplinary curriculum and (c) examining what happens to traditional subject material when it becomes embedded in an interdisciplinary curriculum.</p> <p>Main Findings:</p> <p>Interdisciplinary curriculum</p> <ul style="list-style-type: none"> • Based on observation, interdisciplinary curricula were placed along a continuum in order to highlight some of the differences. At one end were <i>correlated curricula</i> (eg. subjects focus on parallel geographical regions, but curricular conversations proceed independently of each within each subject), moving towards <i>shared curricula</i> (eg. subjects focus on important shared concepts such as justice or racism, but discussions continue to be located within independent disciplines). At the far end of the continuum were <i>reconstructed curricula</i> (concepts and understandings are merged across disciplines to create conversations that go beyond disciplinary boundaries). • Moving from one end of the continuum to the other entailed making more connections across disciplines and spending more time on interdisciplinary activities. It also involved increased planning time and coordination for the participating teachers • Teams did not necessary stay at one point on the continuum, but moved up and down at different points during the year. Where this was done effectively, it was seen to allow flexibility in reinforcing disciplinary content and in avoiding artificial connections. <p>Approaches to instruction</p> <ul style="list-style-type: none"> • The closer a team was to the <i>reconstructed</i> end of the continuum, the greater the emphasis on cognitively engaging instruction in the classrooms tended to be. Two measures were used to determine this: (a) <i>envisionment-building activities</i> (eg. asking questions, developing hunches, generating, examining and elaborating on ideas) - measured using a Likert scale and (b) <i>minutes of open discussion</i> (with stringent criteria) • The patterns of instruction correlated with the types of discussion which took place in teacher planning sessions. The closer a team was to the <i>reconstructed</i> end of the continuum, the more they were likely to explore new ideas as learners themselves, which seemed to lead to them involving their students in similar types of discussion. <p>The school subjects</p>

	<ul style="list-style-type: none"> • Disciplinary values and activities did not disappear, even in the most reconstructed curricula. • Effective interdisciplinary curriculum used disciplines as tools or lenses through which to explore interdisciplinary themes • On occasions interdisciplinary curricula did lead to distortions of disciplinary content, such as an overemphasis on historical fiction or an underemphasis on certain types of writing. • The researchers conclude that interdisciplinary curriculum is neither a problem nor a panacea.
<p>Leadership / Using Data</p> <p><i>American Journal of Education</i> Vol.112, pp. 521 - 548</p>	<p>Young, V. (2006) Teachers' use of data: Loose coupling, agenda setting, and team norms.</p> <p>The researcher investigated grade level teams in four schools to examine the influence of leadership practices and team norms on data use.</p> <p>Main Findings:</p> <p>Leadership practices</p> <ul style="list-style-type: none"> • Agenda setting by school leaders including (1) articulating a rationale for data use; (2) establishing expectations for how teachers will use particular forms of data; (3) modeling data use; (4) planning and scaffolding teachers' learning about data use and; (5) structuring time to allow teachers to use data collaboratively, was associated with the establishment of grade level team norms conducive to productive data use and with productive use of data by teachers. • The use of data by leaders primarily for accountability purposes can easily become decoupled from teachers' use of data for instruction. The purpose of data and how teachers might use data can be unclear to them. <p>Team norms</p> <ul style="list-style-type: none"> • Four sets of norms were found to influence whether and how team members used data for instruction. These norms were plotted on continua from (a) team discord ---- team cohesion; (b) story swapping ---- joint work; (c) low leadership for teachers' data use ---- high leadership for teachers' data use and; (d) low collaboration on data use ---- high collaboration on data use. <p>Roles for data-related functions (Organizational capacity)</p> <ul style="list-style-type: none"> • The main functions related to data use include: (1) dealing with data reporting; (2) interpreting data and teaching teachers about data; (3) furnishing instructional resources linked to issues arising from data analysis; (4) facilitating meetings so that teachers answer "so what"; (5) following up with teachers on responses to data analysis • Schools where these roles were not performed did not effectively use data for instruction • The school where data was used most effectively for instruction evidenced all of the functions though some were not explicitly delineated as being the responsibility of a particular individual. • At the second school where data was used effectively for instruction, the roles were all explicitly delineated, but for this school the idea of using data for instruction was relatively new and the researchers suggest that the emphasis on assigning nonclassroom roles to particular individuals may be developmental.

	<p>Overall the researchers conclude that schools must go beyond presenting compelling arguments and providing professional development. Schools must effect organizational change in leadership patterns, collegial norms and role definitions in order to create the capacity within the school for effective data use.</p>
<p>Leadership / Using Data</p> <p><i>American Journal of Education</i> Vol.112, pp. 496 - 520</p>	<p>Kerr, K., Marsh, J., Ikemoto, G., Darilek, H. & Barney, H. (2006) Strategies to promote data use for instructional improvement: Actions, outcomes, and lessons from three urban districts.</p> <p>This study examined the strategies employed by three school districts to promote data use for instructional improvement.</p> <p>Main Findings:</p> <ul style="list-style-type: none"> Strategies used by the three districts included the development of interim assessments; the development of technology / systems for housing, analyzing and reporting data; the provision of professional development and / or technical assistance on how to interpret and use student test results; the revamping of school improvement planning processes; the encouragement of structured review of student work; the use of a classroom observation protocol called the Learning Walk to assess the quality of classroom instruction. Districts varied widely in the emphasis they gave to different strategies. <p>Focal Initiatives</p> <ul style="list-style-type: none"> One district focused on examining assessment results by grade level to identify areas of needed improvement in math and English and to address a narrow range of strategies to address those needs. A detailed School Improvement Plan was written based on these analyses School faculty in this district consistently described school improvement planning as useful, described the process of improvement planning as useful, and were positive about the impact of the improvement plan on their instruction. They did, however, find the process time-consuming and challenging. A second district focused on creating comprehensive, standards-aligned interim assessments between standardized test intervals. These assessments were linked to a sophisticated data management system. Principals were enthusiastic about the validity and usefulness of the data created, but teachers' opinions were mixed with only 59% of teachers finding them moderately of very useful for guiding instruction and 60% reporting that other classroom assessments provided more useful planning information. <p>Factors affecting data use</p> <ul style="list-style-type: none"> A history of state accountability provided incentives for to use data Lack of accessibility and timeliness of data limited use Perceived validity of data greatly affected data buy-in and use Perceived lack of flexibility to alter instruction limited data use

	<ul style="list-style-type: none"> • Staff capacity and support enabled data use <p>Primary Conclusions</p> <ul style="list-style-type: none"> • A major challenge for schools wanting teachers to use data is to provide data that is timely, valuable and in a user-friendly format <ul style="list-style-type: none"> - data from standardized tests were often perceived by teachers to be not timely or adequately aligned with daily instruction. Of all the types of data used teachers reported “systematic review of student work” to be the most useful for guiding instruction. • A second challenge is to ensure that the goal of data use is aligned within a coherent overall policy framework and in particular to ensure that policies related to curriculum ensure the flexibility to address needs identified by data analysis - some districts had policies of standardized curricular content and pacing which were perceived by teachers to conflict with data use. Many teachers chose to follow curriculum guides rather than make use of information from data. • A third challenge is the building of capacity to deal with data analysis and identify appropriate interventions.
<p>Instructional Strategies</p> <p><i>Science Daily, Feb. 1, 2009</i></p>	<p>College freshmen in US and China: Chinese students know more science facts but neither group especially skills in reasoning.</p> <p>Researchers at Ohio State University tested 6,000 students entering physics and engineering courses at universities in China and the US. Three tests were administered - two on science facts (force concepts & electricity and magnetism) and one on scientific reasoning.</p> <p>Main Findings:</p> <ul style="list-style-type: none"> • Chinese students all follow the same curriculum in HS which includes 5 continuous years of physics classes. American science curriculum is more flexible. • On the factual tests Chinese students significantly outperformed American students (for example on the force concepts test, the Chinese average was 90% and the American average was 50%) • Both groups averaged 75% on the test of scientific reasoning (as the researchers point out, this is not a particularly high score for students hoping to major in science or engineering). • The researchers conclude that teaching facts alone, no matter how thoroughly they are taught, does not necessarily improve reasoning skills. They recommend more inquiry-based learning.
<p>Leadership / Using data</p> <p><i>American Journal of Education Vol. 112, pp. 549 - 571</i></p>	<p>Wayman, J. & Stringfield, S. (2006) Technology-supported involvement of entire faculties in examination of student data for instructional improvement.</p> <p>This research reports case studies (primarily using interviews and focus groups of administrators and teachers) of three schools attempting to involve entire faculties in the examination of student data supported by data systems.</p> <p>Main Findings:</p> <p>Factors that facilitate widespread use of data tools to inform practice</p> <ul style="list-style-type: none"> • <i>District support</i> • <i>Principal involvement</i> - interviewees at all levels highlighted the fact that principal leadership was a key factor

- *Non-threatening triangulation of data* - data drawn from multiple sources, but used for non-threatening, diagnostic purposes
- *Efficient data access* - faculty at every school noted increased efficiency from the use of data management software. Technology was key to facilitating data use.
- *Time to examine data*

Changes in faculty practice as a result of data use

- *Increased sense of teacher efficiency* - many teachers cited an increased sense of teacher professionalism and pride that their school was participating in data initiatives. Teachers noted increased efficiency supported by the use of data software and systems.
- *Better response to student needs* – teachers reported that the data systems enabled them to get a more rounded view of student performance. The possibility of accessing detailed information relating to contradictions and consistencies helped avoid the misdiagnosis possible from a single data source. Many teachers reported they were better able to group students as a result of data.
- *Reflecting on practice* – teachers often reported that data enabled them to examine their own practice. The data often enhanced differentiation of instruction. Teachers in all schools, however, reported some difficulty in connecting data to instruction due to a lack of preparation. One principal was leading teachers in a process of writing their own assessments to reinforce the connection and teachers felt this initiative was successful. Some teachers (often those who also reported that data had helped them improve practice) were dubious about whether there had been an overall improvement in practice. This was often related to concerns about the amount of time used assessing that took away from instructional time.
- *Collaboration* – teachers reported that using data had helped them establish a ‘common language’, that data created more opportunity and need for collaboration and was a respected conversation starter. Some teachers noted that collaboration had become more academic and professional.

Instructional Strategies

Science Daily,
January, 29, 2009

Is technology producing a decline in critical thinking and analysis?

Patricia Greenfield, professor of psychology at UCLA and director of the Children’s Digital Media Center analyzed more than 50 studies on learning and technology.

Main Findings:

- Over the past 50 years our skills in critical thinking and analysis have declined. Professor Greenfield links this to a decline in reading for pleasure in recent decades. She claims that reading engages the imagination and enhances thinking in a way that visual media do not.
- Studies have shown that reading develops imagination, induction, reflection, critical thinking and vocabulary. Since visual media such as video games or movies are real-time media, they do not allow as much time for reflection, analysis or imagination.

	<ul style="list-style-type: none"> • Over the past 50 years our visual skills have improved. Greenfield links this to increased use of technology. • While video games have been shown to improve the ability to multi-task, multi-tasking during a task requiring undivided attention can prevent students from gaining a deeper understanding of the information • Greenfield claims that as people spend more time with visual media, assessment tasks that involve the use of visual media will give us a better picture of what students actually understand. • Overall Greenfield claims that “no one medium is good for everything” and that in order to develop a variety of skills we need “a balanced media diet”.
<p>Assessment</p> <p><i>Theory into Practice Vol. 48 No. 1, pp. 36 - 43</i></p>	<p>Davidson, J. (2009) Exhibitions: Connecting classroom assessment with culminating demonstrations of mastery.</p> <p>In this article, Jill Davidson from the <i>Coalition of Essential Schools</i> describes the use of exhibitions as culminating assessments at <i>The School of the Future</i> in New York.</p> <p>Main Arguments:</p> <p>Definition</p> <ul style="list-style-type: none"> • An exhibition is a student presentation of their own work through verbal, written or other means, often incorporating technology. Exhibitions generally cover a large chunk of learning, often a year or more. <p>The SoF system</p> <ul style="list-style-type: none"> • Students must complete four exhibitions to graduate • In each exhibition students must demonstrate knowledge of, and critical thinking about, a particular topic using five Habits of Mind: Point of View, Evidence, Connections, Alternatives, Significance. They must also demonstrate communication skills. These habits of mind are assessed as part of the exhibition using dedicated rubrics. • The assessors include experts from outside the school <p>The value of exhibitions</p> <ul style="list-style-type: none"> • A close association between assessment and instruction • Assessment is <i>authentic</i>, because it simulates the kinds of open-ended challenges people face working in a field of study • Students receive frequent feedback on their work and have multiple opportunities to revise before they finally submit it. • Schools that focus on exhibitions and other forms of performance-based assessment have lower drop-out rates, higher college-entry rates and improved college performance and persistence <p>Conditions supportive of exhibitions</p> <p>With the right conditions exhibitions “can function as a fulcrum for ongoing school improvement”. These conditions are:</p> <ul style="list-style-type: none"> • School-wide, exhibitions-aligned instructional and assessment processes • Structure that support sustained collaboration and inquiry among students and teachers

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| | <ul style="list-style-type: none">• Strong connections with community outside school• Active participation in a system or network of other exhibition-driven schools |
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