Change Article Reflections:
Educational Technology

Bell, M., & Bell, W. (2005). It's installed ... now get on with it! Looking beyond the software to the cultural change. *British Journal of Educational Technology, 36*(4), 643-656. doi:10.1111/j.1467-8535.2005.00541.x

This article described the 5 year implementation of Blackboard, a course management system, in four institutions. They suggest that key factors for successful implementation and sustainability include: all stakeholders are involved; technical and pedagogical needs must be met; staff development must cover the whole spectrum of support; customer care (students) must be proactive.

Clariana, R. (2000). Change in instruction-related web sites in an 18-month period. *British Journal of Educational Technology, 31*(3), 251-253.

This short little article studied the change in instructional web sites during an 18 month period. They found that 7 % of the sites had major changes in the URL but were easily found again so only a slight impact. 16T of the sites were completely lost and unable to find again. This has an important impact on the design of lessons as time must be spent checking links and reviewing sites each time the lesson is taught.

Conlon, T. (2000). Visions of change: Information technology, education and postmodernism. *British Journal of Educational Technology, 31*(2), 109-117.

Conlon contrasts two visions of educational technology change: the paternalistic view with tighter regulation of schooling and initiatives that focus on preparing young people to have IT skills for the knowledge economy. The other vision he names libertarianism, an individualistic, high-technology, deschooling agenda. He shows the clear and startling shortcomings of both views, and calls teachers and technologists to craft a more balanced vision that encompasses the need to prepare students to make a life as well as preparing students to make a living. Powerful, thought-provoking, foundational article.

Dawson, K., & Dana, N. F. (2007). When curriculum-based, technology-enhanced field experiences and teacher inquiry coalesce: An opportunity for conceptual change? *British Journal of Educational Technology, 38*(4), 656-667. doi:10.1111/j.1467-8535.2006.00648.x

In this article, the authors began with the troubling observation that student teachers struggle to synthesize technology integration with the complexities of teaching

via reflective journals. The student teachers' journals focused mainly on logistical and classroom management issues (*not surprising considering the CBAM change model*).

So they used a teacher inquiry process that started with defining a "burning question" that emerges from their practice, developing a research plan for data collection through journals, student work, interviews with students, etc; analyzing the data to determine an action plan, implementing a change, and then sharing the results of their work with other professionals. The authors hoped that using this method would promote conceptual change for the student teachers.

This was a research study and they used the final inquiry papers of the students as the data.

The article focuses on one student, who had several shifts in her thinking: from teaching as black and white to teaching as grey; from homogenous to differentiated instruction; from technology-centered to curriculum centered; and from technology integration as simplistic to complex and multifaceted. *!!! Those are amazing changes!!*

"Dole and Sinatra (1998) claim the best forms of engagement 'involve deep processing, elaborative strategy use, and significant metacognitive reflection' (p. 121)." The authors show how using the teacher inquiry method supports these important components.

This article makes me want to learn more about the teacher inquiry method and how I could use it as I work with teachers.

Ertmer, P. A. (1999). Development - addressing first- and second-order barriers to change: Strategies for technology integration. *Educational technology research and development, 47*(4), 47.

This article focuses on the first order barriers to educational technology: adjusting current practice without addressing underlying beliefs. Second order changes confront beliefs about practice which changes goals, structures or roles. First order barriers are extrinsic to the teacher and include lack of access, time, and support. Second order barriers are intrinsic to teachers and include beliefs about teaching, computers, and classroom practice.

Teachers are viewed as the key to the change process with educational technology.

This article has two visions as well: one with the acquisition of hardware to provide access to all students; the second where technology assists in achieving multidisciplinary learning goals. *These sound similar to Conlon's two extreme visions.*

The second order barriers include teacher beliefs about traditional classroom methods, an unclear vision of what is expected of them, and uncertainty about the relevance of technology in their curriculum. *That's for sure – if they can't see how to use it in THEIR REQUIRED CURRICULUM they aren't going to use it. Period.*

Second order barriers must be addressed before higher levels of integration will happen. *Really important for us to think about as we are training teachers in grant implementations!*

First and second order barriers should be addressed simultaneously if possible.

Schools should develop a vision of the intentions with new technologies. Teachers need access to models. Teachers need to engage with each other in ongoing reflection.

Teachers need to collaborate with each other, have ongoing conversations with colleagues and experts and across sites.

Of course time, support, classroom management, and assessment need to be addressed as well. Professional development needs to change significantly to address all of these areas.

Even though this article is old, it provides some important foundational information that still applies today.

Kerr, S. T. (2005). Why we all want it to work: towards a culturally based model for technology and educational change. *British Journal of Educational Technology, 36*(6), 1005-1016. doi:10.1111/j.1467-8535.2005.00570.x

The question at the heart of this article is: p. 1006: "So the question emerges: if the value of using technology in schools to promote learning is not immediately self-evident, why do we pay so much attention to it and why do we repeatedly return to it as a panacea for all manner of educational problems?" Another way to look at it is on page 1007: "'If technology helps us work, entertains us, is increasingly tied into the parameters of our existence generally, then why not invite it into the institutions of education, the places where culture itself is both sustained and revised?'"

One perspective is memetics: which comes from "meme" which is "a cultural unit that individuals rapidly take up and pass along to others" *think blogging memes.*

The other perspective is that of the social history of technology: which looks at perspectives on how the devices came to be and how they are used and what the consequences are.

The author suggests that technology in education may be a successful meme, an extremely successful cultural idea.

p. 1014: "Using ICTs for educational purposes, in other words, is a meme, a self-replicating, virus-like construct that spreads widely (via human language and agency) because it has power and is taken to be useful by those who come in contact with it." *With VC for example – those that try it usually like it and how it seems useful to their students, therefore they encourage others to use it.*

Kowch, E. G. (2005). Do we plan the journey or read the compass? An argument for preparing educational technologists to lead organisational change. *British Journal of Educational Technology, 36*(6), 1067-1070. doi:10.1111/j.1467-8535.2005.00577.x

This article notes that very few educators and educational technologies are found in the "influential education leadership networks spanning large institutions and state governments". Next the article asks educational technologists if their plans are strategic (5 plus years), tactical (1-3 year) or operational (1 year). Educational leaders with a classical leadership background readily admit they don't understand educational technology.

The article references the theory of social capital (Bourdieu 1998) which has three forms: bonding (individuals working together), bridging (between diverse social entities), and linking (between hierarchical social entities).

p. 1069 "Too little research on the educational technologist as leader exists."

This article seemed like it just started and then ended too quick! It argued that educational technologists need to be able to speak the language of change and to lead and manage change in education today.

Porter, B. E. (2005). Time and implementing change. *British Journal of Educational Technology, 36*(6), 1063-1065.

People and time are two major factors in implementation/change. The author suggests that we should not make slow adopters face consequences because they are thinking. If they reject the change, it is usually because of their values and experiences.
It's interesting that Porter is thinking about time, because it's what teachers mutter about as one of the big barriers to implementing educational technology.
Porter suggests that we should be flexible with time and give people time to implementation technology based innovations. We shouldn't worry about how long it takes to achieve.

Ravitz, J., & Hoadley, C. (2005). Supporting change and scholarship through review of online resources in professional development settings. *British Journal of Educational Technology, 36*(6), 957-974. doi:10.1111/j.1467-8535.2005.00567.x

This article advocates using professional development opportunities to have teachers review online resources within a framework so that knowledge can grow about the resources. *Seems like a great plan but hard to really sustain widely.*

Tsai, C.-C. (2001). Collaboratively developing instructional activities of conceptual change through the Internet: Science teachers' perspectives. *British Journal of Educational Technology, 32*(5), 619-622

The teachers interviewed for this article reflected on whether they found it helpful to collaborate on instructional activities with other teachers via the Internet.

Whitworth, A. (2005). Colloquium: The politics of virtual learning environments: environmental change, conflict, and e-learning. *British Journal of Educational Technology, 36*(4), 685-691. doi:10.1111/j.1467-8535.2005.00549.x

Innovation is a continuous process. Conflict is an important part of innovation and change. It is essential to think about "innovations in educational technology through the lens of politics" p. 690.

Change Article Reflections: Sage

Bridgman, T., & Willmott, H. (2006). Institutions and technology: Frameworks for understanding organizational change--the case of a major ICT outsourcing contract. *Journal of Applied Behavioral Science, 42*(1), 110-126.

This article talks about the overlapping fields of information technology (IT) and organization studies (OS). "Technical systems enable and constrain processes of institutional reproduction and transformation" (p. 111). Technology has physical and social components. A theory referenced is the actor network theory - http://en.wikipedia.org/wiki/Actor-network_theory. Another theory they are using is that of discourse theory by Laclau and Mouffe: http://en.wikipedia.org/wiki/Hegemony_and_Socialist_Strategy

Bill would be interested in this article and the main article referenced which is about telecommuting.

Questions raised include: the authors seem to favor constructivist vs. determinist; but what does that really mean in this context? These are clearly philosophical underpinnings.

Thankfully this article has a case study in it to try to make it more applicable. But it's still a tough read, mostly over my head.

The authors disagree with Orlikowski and Barley that technology can be a determining or causal factor/variable in technology & organizational change research. "The challenge is to avoid the idealist excesses of constructivist analysis but without subscribing to the realist discourse commended by institutional theorists where the possibility of identifying and revealing "affordances" and "constraints" is assumed without reference or regard to their discursive constitution in the practices of their enactment and disclosure." P. 122.

In the case study, the UK equivalent of the IRS tried to outsource their IT to solve problems with their tax procedures etc. But it failed.

Constantinides, P., & Barrett, M. (2006). Large-scale ICT innovation, power, and organizational change: The case of a regional health information network. *Journal of Applied Behavioral Science, 42*(1), 76-90.

This little quote could partly explain why Kotter's theory of change is so dry and unappealing to me: "Kling's (1980) and Markus and Robey's (1988) seminal articles on the subject challenged models of change that tended to place undue weight on the rationality of managers directing the change and on the capability of ICTs to create predictable organizational changes in work routines. Their suggestion to instead develop process-based approaches and seek emergent analyses of ICT-mediated organizational change has been reflected in later IS research (e.g., Orlikowski, 2000; Robey & Boudreau, 1999)." P. 77. (Note they reference the same Orlikwoski article that Bridgman's article does above.

An interesting net perspective is that instead of analyzing individual, groups and organizations in change/organizational studies, one should look at networks; specifically

networks of power. "Every instance and scale of collaboration is achieved through complex negotiations among diverse actors working under local conditions" (p. 77).

This stuff is so deep I'm not able to summarize yet. Just quoting. This one is about researchers views on the causal structure between ICT and organizations: "Building on the work of Pfeffer (1982), Markus and Robey distinguished between three main perspectives of casual structure: the *technological imperative* (where ICTs are viewed as an exogenous force with the ability to determine organizational change), the *organizational imperative* (where out-comes are determined by managerial choice), and the *emergent perspectiv*e, in which outcomes are determined neither by ICT nor the organization but from the (continuing) interaction between the two." (p. 78). *I think for K12 educational technology the later is better because pedagogy and curriculum drive implementation of technology and vice verse. It goes both ways.*

p. 79: ICT innovation and the organizational change it helps to bring about emerge as a consequence of multiple and diverse interests; it is thus entrenched in negotiations of power.

p. 79: Overall ICT innovation – from initial conceptualization to development and implementation – is a process of change. *I never thought of it that way. Then the CAPspace development is a change process also. We add new tools, see how the users use them; solve the problems created, see how they use that; solve those new issues, and so on and so on as it continuously develops.*

This article would be great for Brenda and Bill both because of the connection to health and the implementation of ICT.

Interestingly, in the case study, they found "key, self-motivated individuals" that then mobilized "a network of power" (p. 84). Reminds me of the innovation champions in my study. One of the recommendations is for the IT vendor to create user groups for collaboration.

Davidson, E. (2006). A technological frames perspective on information technology and organizational change. *Journal of Applied Behavioral Science, 42*(1), 23-39.

This article suggests that change is an interpretive process, and for actions to change, then understandings must change. This connects to the conceptual change in the Dawson article above. *(Another jab at Kotter – where is the conceptual change in his model?).*

Interesting for thinking about theories. Davidson says that Orlikowski's article has been cited a lot, but most of them are brief citations, suggesting that the theory has become a slogan! (p. 24).

This article builds upon and critiques Orlikowski's article and is again challengingly theoretical.

Durant, R. F. (2007). Toxic politics, organizational change, and the "greening" of the U.S. military: Toward a polity-centered perspective. *Administration Society, 39*(3), 409-446.

This is a grounded theory article, in case anyone needs an example of that when taking the qual class! I picked this article because it sounded interesting. Actually the political view of it might be useful for Ralph.

This article references one that would probably be a good overview of change: "Fernandez and Rainey (2006): identify six major sets of theoretical perspectives that they further classify into two genres. The first sees organizational actors as purposive, strategic, and largely captains of the fate of change efforts (rational adaptive, policy diffusion and innovation, and dialectical and conflict theories). The second sees actors as reactive, tactical, and largely at the mercy of larger forces (institutional, lifecycle, and ecological theories). What both sets of theories do provide, however, is a sense for the travails accompanying any large-scale organizational change effort" (p. 409-410). The reference is: Fernandez, S., & Rainey, H. G. (2006). Managing successful organizational change in the public sector: An agenda for research and practice. *Public Administration Revie*w, *66*(2), 168-176. Also see e-commentary for this article on Theory to Practice Web site, www.aspanet.org, click on Theory to Practice, and access Archives.

This article is interesting also for addressing any change issue where there are two conflicting values (in this case national defense and protecting public health, safety and the environment).

The article has a chart/framework showing the various perspectives and discusses the opponents and how they will resist the change: including issue definition/redefinition, deligitimation, demobilization, deinstitutionalization, and disinformation.

Hargreaves, A., & Goodson, I. (2006). Educational change over time? The sustainability and nonsustainability of three decades of secondary school change and continuity. *Educational Administration Quarterly, 42*(1), 3-41.

Note: Hargreaves worked with Fullan for quite a while.

Quote from the abstract: (p. 3)

Findings: The article indicates that most mainstream educational change theory and practice in the field of educational administration neglects the political, historical, and longitudinal aspects of change to their detriment. Educational change, it finds, is shaped by the convergence of large-scale economic and demographic shifts that produce five change forces (waves of reform, changing student demographics, teacher generations, leadership succession, and school interrelations) that have defined three distinct periods of educational change during the past 30 years.

Conclusions: These forces and their convergence have ultimately reaffirmed the traditional identities and practices of conventional high schools and pulled innovative ones back toward the traditional norm in an age of standardization (though to a lesser extent where the schools are professional learning communities or have an activist orientation). Conclusions are drawn in the form of a strategic theory of sustainable change.

Quote from p. 4 in the lit review:
"Educators appear to know how to create islands of change but not how to construct archipelagoes or build entire continents of them (Hargreaves, Earl, & Ryan, 1996).

Because of their size, bureaucratic complexity, subject traditions and identifications, and closeness to university selection, high schools have proved especially impervious to change and to adapting to the changing learning needs of their increasingly diverse student body (Goodson, 1983; Grant, 1988; Hargreaves, 1994; McLaughlin &Talbert, 2001; Siskin, 1994). *This could have been used in my dissertation to also explain why high schools are using VC less than the elementary schools. It also gives a caution to our latest grant project.*

Even successful reform projects plateau after 2 years and have more impact on elementary than high school (p. 5).

"Factors such as leadership succession, shifts in district focus, and the maturing lives and careers of teaching staff seem to lead to an attrition of innovative energy over time" p. 6. *This also explains the drop in use of VC coordinators who have been doing it for a longer period of time in my research. They get tired!*

p. 6: "In general, with just a few exceptions (e.g., Oakes, Quartz, & Lipton, 2000), change theories neglect these larger political and social forces that give change its historical meaning and significance; or they appeal to generalized theories of paradox (Deal &Peterson, 1995) or complexity (Fullan, 1993; Hoban, 2002), where there is no place for power or the past."

p. 15: "schools are subject to influence by repeated waves of reform that define historical periods or directions that the schools, depending on their identity, either embrace or resist. These waves challenge, then in turn revert to traditional grammars of schooling defined in terms of conventional academic subjects, schedules, tracking, and assessments. Teachers accept or resist particular reforms according to the correspondence or not of the reforms with their generational missions, their academic subject orientations and commitments, and their school's identity." *This is why older teachers tend to just see yet another wave coming at them that if they hold on long enough it will pass and they can keep working as they prefer.* P. 17: *more on what it's like for teachers:* "These cumulative policy reversals led teachers with mature lives and longer careers to experience reforms as swings of a pendulum that made wholesale commitment ultimately futile— unless the reforms in question aligned with and furthered their own values, interests, and identities. Cycles of change for policy makers last no more than the 5 years defined by electoral cycles. For teachers, they last almost a life-time (Huberman, 1993)." And also on page 18: "almost all teachers found these contradictions enervating and exasperating, and their commitment to change weakened as their inventiveness was eventually overcome and their energy could no longer be sustained." *No wonder teachers want to just close the door and get on with their work.*

p. 19: "Leadership succession is, in this sense, almost always an emotionally intense episode in the life of a school"….. "Few things, our data suggest, succeed less than leadership succession."

p. 23. This quote might be interesting to Collette's research: At Stewart Heights, continuous observations of the School Climate Committee indicated that over time, it had initially responded to problems of student misbehavior by reviewing the curriculum and strengthening the school as a community. After the impact of Secondary School Reform in the late 1990s, however, when teachers were overloaded with implementation and had less time to spend with students, the School Climate Committee began to blame students

themselves for increasing misbehavior and merely tightened up behavioral codes and other demands for compliance in response."

p. 25 *on the newer generation, which in some ways describes my perspective – the individual kids:* "Reform environments are interpreted neither cynically nor stoically by the incoming teacher generation but are accepted simply as the facts of life of teaching. The life missions of these teachers seem less grand, more circum-scribed. Teaching is animated less by great social missions than by the personal quest to make a difference in individual lives." *Whoa this is amazing too and describes me for sure:* "They are more assertive about their own learning and career needs and more vigilant about protecting the boundary that separates their work from their lives. They do, however, resent the process of reform when it actively undermines their professional image and working conditions, and they dislike the surrounding culture of cynicism and embitterment among older colleagues that standardized reform has created."

p. 30-31 describing the 3rd period that we're in right now: "Overwhelmed by implementation requirements and intensified work demands in a downsized system characterized by escalating performance requirements and diminishing support, staff rooms in the project schools have become increasingly empty as teachers have snatched whatever time they can together to deal with the urgency of implementation. In this period, school leaders who move with increasing speed around the accelerating carousel of leadership succession are regarded as behaving more like managers than leaders and as being more attached to the district and their own career prospects within it, rather than to the future of their school. *OUCH! I certainly see this going on.*

P. 31: how should we see change in schools? "History and politics must move to the center of educational change theory and research in educational administration if change is not to be misunderstood and misrepresented as only a forward moving, largely technical, and politically neutral process.

p. 32: "those changes that did persist were ones that aligned with or even tightened the existing grammar of schooling."

p. 34: "In our study, standardization is proving to be the ultimate enemy of enduring innovation and sustainable learning communities." *Yikes, but I agree!*

Definition of sustainability: "classic definition of environmental sustainability outlined in the report of the Brundtland Commission (1987) on sustainable development, in which development "meets the needs of the present without compromising the ability of future generations to meet their own needs," the key principles of sustainable improvement appear to be that sustainable improvement focuses on what matters, that makes improvement last and spread, and that achieves its ends without doing harm to others around it (Hargreaves & Fink, 2004, 2006)." P. 35

The authors suggest that those working in change should be more "politically critical and more historically aware." P. 35.

How to interact with older teachers: "engaging with the strengths of teachers' generational missions rather than treating them with administrative disdain as only negative sources of resistance among a degenerating teaching force" p. 35.

For further study, there are several more articles that go with this one in the same journal.

The big question raised by this article for me is – so how do I fit into this larger picture of educational change? This article also compellingly explains why I find the management change articles and books so frustrating.

This article also eloquently articulates what I sense from schools – that they are pulled in two extreme conflicting directions: one for standardized tests and accountability and the other for innovative methods such as technology integration, UDL, differentiated instruction and other constructivist student centered methods. The two don't mesh. So what do teachers do? Try to ignore it all and survive.

Holt, D. T., Armenakis, A. A., Feild, H. S., & Harris, S. G. (2007). Readiness for organizational change: The systematic development of a scale. *Journal of Applied Behavioral Science, 43*(2), 232-255.

This article is based on the idea that readiness for change includes that the employees believe they can implement the change, they think the change is appropriate for their organization, the leaders are committed to the change, and the change is beneficial. Most of the article is on scale development and would be good for anyone creating a scale. Otherwise these concepts are great for an understanding of the change process.

Jimmieson, N. L., Peach, M., & White, K. M. (2008). Utilizing the theory of planned behavior to inform change management: An investigation of employee intentions to support organizational change. *Journal of Applied Behavioral Science, 44*(2), 237-262.

This article is a lot about employees behavior, how to manage it within a change. Too behavioral for me.

Lines, R. (2005). The structure and function of attitudes toward organizational change. *Human Resource Development Review, 4*(1), 8-32.

This article is on how people react to organizational change. Attitudes towards change are influenced by social influences, evaluative beliefs, emotions, the content of the change, the participation in the change, and their values towards the change. The conclusion is that within change management, the leader should focus on the need for change, the vision, and early wins.

Orlikowski, W. J., & Yates, J. (2006). ICT and organizational change: A commentary. *Journal of Applied Behavioral Science, 42*(1), 127-134.

This article is an overview of a special issue of this journal.

Sorge, A., & van Witteloostuijn, A. (2004). The (non)sense of organizational change: An essai about universal management hypes, sick consultancy metaphors, and healthy organization theories. *Organization Studies, 25*(7), 1205-1231.

This is a snarky article but an important read to contrast all the management and leadership suggestions you might be reading in other articles and books. p. 1209: "The global business world has become infected by a virus that induces a permanent need for organizational change." It's a good article for the business perspective too, as it has lots of references to companies, the stock market, mergers, etc.

Tranvik, T., & Selle, P. (2007). The rise and fall of popular mass movements: Organizational change and globalization -- the Norwegian case. *Acta Sociologica, 50*(1), 57-70.

This article would probably be interesting to Ralph also with the focus on civic participation affected by globalization.

Van de Ven, A. H., & Poole, M. S. (2005). Alternative approaches for studying organizational change. *Organization Studies, 26*(9), 1377-1404.

The authors look at four approaches for studying organizational change. They "argue that coordinating the pluralistic insights from the four approaches provides a richer understanding of organization change than any one approach provides by itself." P. 1377.

The four approaches are compared by their ontology (organization is a noun/thing vs. organization is a verb) and their epistemology (method for studying change) either variance method or process narratives.

Approach I (Variance/noun): Variance studies of change in organizational entities by causal analysis of independent variables that explain change in entity (dependent variable)?

Approach II: (Process/noun): Process studies of change in organizational entities narrating sequence of events, stages or cycles of change in the development of an entity

Approach III (Process/verb): Process studies of organizing by narrating emergent actions and activities by which collective endeavors unfold

Approach IV (Variance/verb): Variance studies of organizing by dynamic modeling of agent-based models or chaotic complex adaptive systems

My notes for QL post

Attached are the change article summaries I've been working on. They are really more like notes & scribbles and reflections on the articles. I did find a few that would be great for several of you. So you might want to search for your name in the file. Or I'll list some here too. If you open the file and search for your name, you can see my summary and notes on that article.

FOR BILL: Bridgman, T., & Willmott, H. (2006). Institutions and technology: Frameworks for understanding organizational change--the case of a major ICT outsourcing contract. *Journal of Applied Behavioral Science, 42*(1), 110-126.

FOR BILL & BRENDA: Constantinides, P., & Barrett, M. (2006). Large-scale ICT innovation, power, and organizational change: The case of a regional health information network. *Journal of Applied Behavioral Science, 42*(1), 76-90.

FOR RALPH (connecting organizational change theory to public service): Durant, R. F. (2007). Toxic politics, organizational change, and the "greening" of the U.S. military: Toward a polity-centered perspective. *Administration Society, 39*(3), 409-446.

FOR COLLETTE (p. 23 has an interesting quote on student misbehavior that is probably relevant to your research) : Hargreaves, A., & Goodson, I. (2006). Educational change over time? The sustainability and nonsustainability of three decades of secondary school change and continuity. *Educational Administration Quarterly, 42*(1), 3-41.

FOR RALPH (globalization's effects on civic participation): Tranvik, T., & Selle, P. (2007). The rise and fall of popular mass movements: Organizational change and globalization -- the Norwegian case. *Acta Sociologica, 50*(1), 57-70.