Change Stories

A White Paper from the Share Project (http://www.sharingpractice.ac.uk)

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Introduction

Stories of teachers changing practice were gathered in the context of the Sharing Practice project (http://www.sharingpractice.ac.uk). Stories were solicited on-line (on a webpage) in response to the prompt:

> *Can you think of a time when something—an event, an article, a conversation, a reflection, an idea, a meeting, a plan—caused you to make a change in your teaching? What was it? What happened?*

Contributors were then asked to "self-signify" their stories with personal, contextual metadata. Collection and analysis were conducted using the SenseMaker™ software suite, licensed from Cognitive Edge.

102 stories were collected over four weeks in February and March 2011, of which 99 were usable. Stories were gathered via the webpage, and subsequently face-to-face, individually and via a "story-circle" held at the SIGCSE Symposium in March 2011.

Characteristics and Limitations of the Sample

Because of the situation of the project, there is inbuilt bias in the sample. Most of the contributors were personally solicited, either by a member of the project team, or from related projects – these related projects are mentioned in several stories. The majority of the contributors (56) teach in Computer Science (or a closely related subject – for example "information systems" or "databases") and the majority of stories (82) are contributed by someone with more than 10 years teaching experience. The great majority of contributors (80) are over 40 and the largest representation is in the 40-49 age group (36). 64 contributors have taught at their current institution for more than 5 years, 34 of those for more than 10.

The type of change described is also heavily skewed to the positive. There are only thirteen stories which contributors do not feel "glad" or "enthused" about, and only one which is unequivocally negative (and about which the contributor feels "angry"). This contrasts with our (anecdotal) experience where colleagues talk of forced change - whether because of resource constraints, management dictat, or departmental fashion-following ("we all doing problem-based learning now").

The sample is relatively evenly balanced in terms of gender with 54 male and 44 female contributors, and institution-type with 28 research-intensive, 36 teaching-intensive and 31 mixed teaching and research institutions represented.

Dataset

Each contributor wrote a story of their change, gave it a title and attached keywords. All these were free-text. Some contributors added several stories.

For each story, contributors were then asked to indicate how they felt about the change in the story in respect to several "signifiers". These were presented either as polarities, where one end of the "scale" represented a quality taken to excess and the other its absence (for example, "The change this story describes is limited to individual practice" at one end to "The change this story describes involved programmatic change (QA)" at the other) or as triads, where each point of a triangle represented a separate quality (for example: The change in this story relates most to ... "Student Motivation", "Student Achievement" or "Student Experience"). Neither polarities nor triangles had points noted on them, so contributors were not selecting from fixed values. Contributors were asked to make a mark on the scale (or triangle) that "best described" change in their story. Contributors were also asked to select from lists of mutually-exclusive options asking them: how they felt about the story, who they thought should pay attention to it, and how long they would remember it.

Each contributor was also asked to indicate some demographic data – for example, age, gender, length of career, length of time in current institution. Some of this data was gathered via options from a list of possibilities (for example, age was selected from a series of ranges), some was write-in (for example, discipline taught). Some contributors submitted more than one story.

Analysis: SenseMaker™

Within SenseMaker™ analysis, the content – the text – of the stories is not initially considered. Instead the stories are examined as a set, clustered around the contributor-provided metadata. So, for example, each triad may be reproduced, populated with the dataset, where each dot represents a story – or sometimes several stories – at each point. Although many stories may be shown at one point, one on top of another, when we report "outliers" they are all single stories. This representation is not a graph, but rather provides an impression of the relationship between the stories in the dataset. [See fig. 1]

Figure 1: exemplar SenseMaker™ triadic representation

Polarities have a different, although analogous, histogram representation [see Fig 2] where each story (or group of stories) is represented by a bar, and the whole may be overlaid with simple statistical data. Figure two represents data for the polarity "The change this story describes is small-scale" (far left) to "The change this story describes is large-scale" (far right)

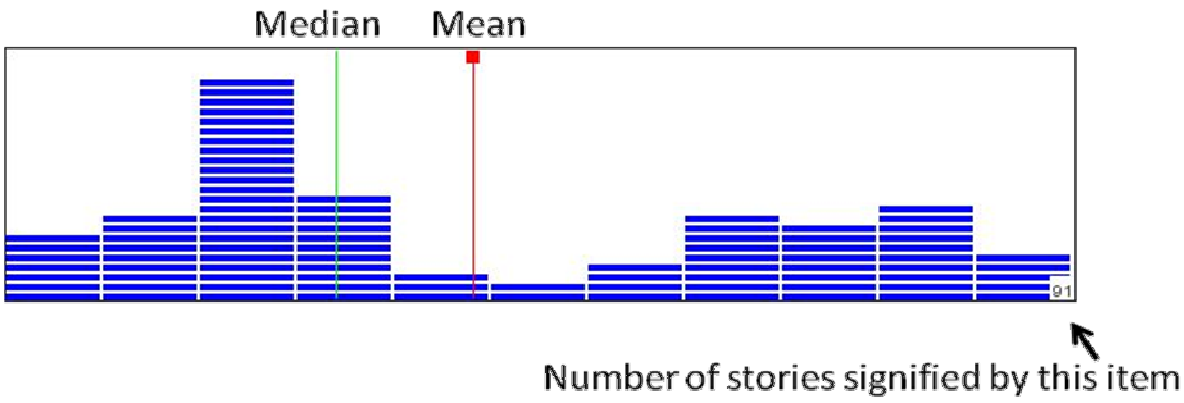

Figure 2: exemplar SenseMaker™ dyadic representation

These visualisations can then be interrogated by any of the questions – for example, the type of institution the contributor works at (perhaps research-intensive or teaching-intensive). Due to our inexperience in designing SenseMaker™ studies, some of the questions were effectively unusable in our analysis – notably "discipline" and "country" – as we permitted free-text entry, rather than constraining choice to a list of options.

We examined the data present in each polarity and triad for each choice in each question. Simple visual inspection showed where there were obvious clusters, similarities or differences in patterns (and equally easy identification where data was evenly spread and there was "nothing there"). It also allowed easy identification and inspection of outliers or other oddities. Some questions were more "telling" than others, often providing quite strong patterns– for example, institution-type, teaching experience and gender.

SenseMaker™ Results

Not every interrogation of the dataset was meaningful. Here we report what we saw, the patterns that were evident and strong from our dataset.

Boredom, fear or excessive stress?

We presented this triad of responses under the overarching question "What long-term outcome of change do teachers fear more?". Overall, stories were more concerned with failure than stress, and more of the individual stories which fell between those two extremes were concerned with failure than with stress. The stories that are most strongly associated with the "boredom" corner share some characteristics in that their contributors are all from research-intensive or mixed research-and-teaching institutions and they believe the change their stories describe is new within their discipline.

Who does change affect?

When asked who was affected by the change in their story, there were notable differences in response dependent on how long the contributor had been teaching, and on the time a contributor had been at their current institution. In both cases the longer the time, the more the response moves from the change affecting individual practice only towards affecting other colleagues and then programmatic change.

Work from the EPCoS project (Fincher, Petre, & Clark, 2001) suggested that educators most easily adopt small pieces of practice, things that they can implement "under the radar", without asking others' permission, or involving QA procedures. Evidence from this study, however, suggests that the observation from the EPCoS project may hold for early-career, or less experienced, teachers. As teachers become established within a department it may be that they become involved in programmatic activities, or that they are more prepared to claim programmatic influence.

Figures 3 and 4 represent the outcomes of the “who does change affect?” question. The representations are not cumulative, that is the stories represented as dots in “40-49” do not include the stories in “30-39”.

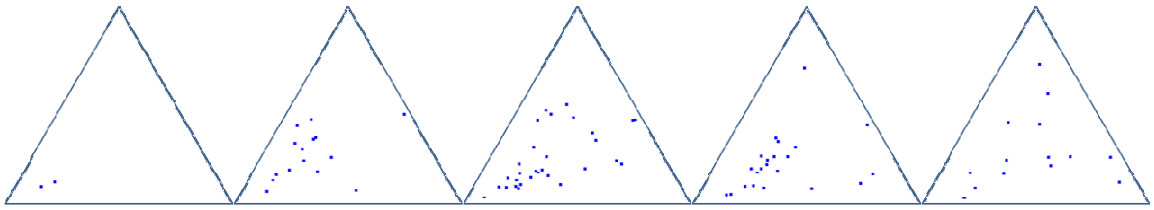

Figure3: Scale of effect of change by age of contributor (individual practice bottom left corner, other modules/other colleagues top, involves programmatic change bottom right)

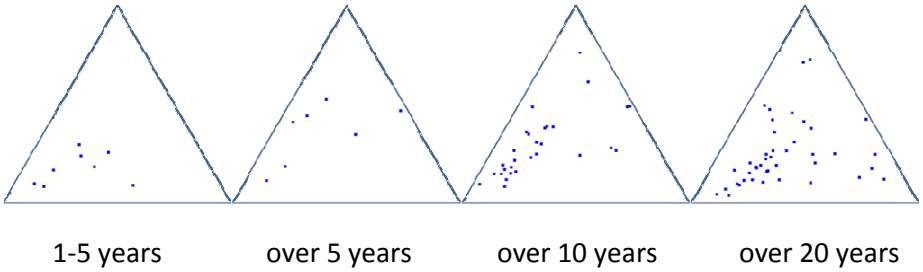

Figure 4: Scale of effect of change by length of teaching experience of contributor (individual practice bottom left corner, other modules/other colleagues top, involves programmatic change bottom right)

When associated with the question “who should listen to this story?” then only those contributors whose stories affected individual practice claimed that “no one special” should pay attention to them (i.e. the ‘no-one special’ dots only appeared in the bottom left of the triangle). As the scale of the change increases, so does the breadth of the anticipated audience, moving through “my department”, “my discipline”, “my institution” and “the world”.

A Focus on Students

There has been considerable emphasis on “student engagement” in the UK Higher Education sector over the last 10 years (Little, Locke, Scesa, & Williams, 2009), so we asked contributors, in a triad, whether their stories most related to student experience, student motivation or student achievement. No stories emphasised student motivation. The stories associated with the “student achievement” corner were all from contributors in teaching-intensive institutions, and all from mid-career contributors who had been teaching 10 years at their institution (but not over 20). The five stories most extremely associated with “student achievement” were all from female contributors, and when we examined the text of the stories, they were all concerned with scaffolding support for students, not with coaching for higher grades or compliance with bureaucratic requirements (such as minimising failure rates).

A Focus on Teachers

We also asked how teachers themselves felt about the change described in the stories, whether they considered it addictive, whether they adapted to it or whether they distrusted it. There was only one story that showed strong affinity with change being addictive. Those stories most strongly associated with "distrustful" were from teaching-intensive or mixed teaching-and-research institutions. At the same time, when we asked what the source of change was – individual agency, local culture or external driver – then those who said that the source was "individual agency" were mostly from research-intensive institutions. Teachers from research-intensive institutions were also most likely to claim a limited audience for their change – "no one special", or sometimes "the department".

When we questioned the nature of the change – whether it was new to the department, new to the discipline or totally new – there was a small, continuous, effect that the older the contributor and/or the longer they had been in their career (that is, the more years of experience they had) the more likely they were to say that the change their story described was "totally new".

We asked teachers whether they considered change to be a "continuous and healthy" process (far left in figure 5) or "dangerous and troublesome" (far right).

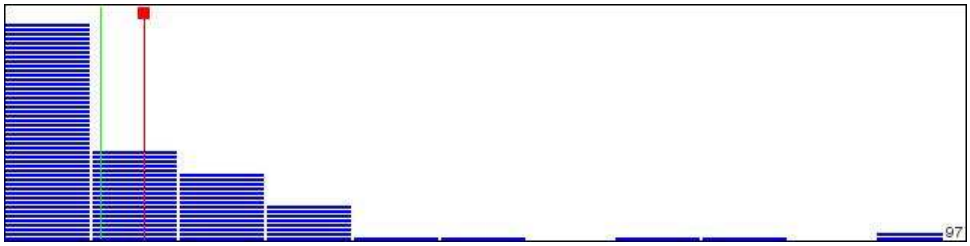

Figure 5

Although there were very few overall who considered change to be "dangerous", all instances where it is occur in teaching-intensive institutions (in fact, almost all institutions below the mean are teaching-intensive or mixed teaching-and-research; equally almost all research-intensive institutions fall above the mean, and thus consider the change they describe as part of a "continuous and healthy process"). Also striking is the similarity of distribution between figure 5 and figure 6, below, which represents "change is a result of individual teachers' actions" (far left) and "change is a result of strategic and management activity" (far right).

Figure 6

Graham Gibbs (Gibbs, Knapper, & Pinchin, 2009) undertook a study of change in teaching in 21 research-intensive institutions. He says: "The study was conducted because it had been observed

that where very high quality teaching could be seen in these universities it emerged from within departments, rather than being initiated from the centre, and the universities in the network wanted to understand how the departments had managed to create such an environment" (p.4). We can similarly observe from our dataset that teaching change in research-intensive departments is associated with individual agency, rather than being planned by an institution or implemented across a department.

We were interested in the impetus for change, in what promoted or catalysed it. In pursuit of this we asked whether the change the stories described was "evidence based" (far left in figure 7) or whether it arose from "instinct or intuition" (far right).

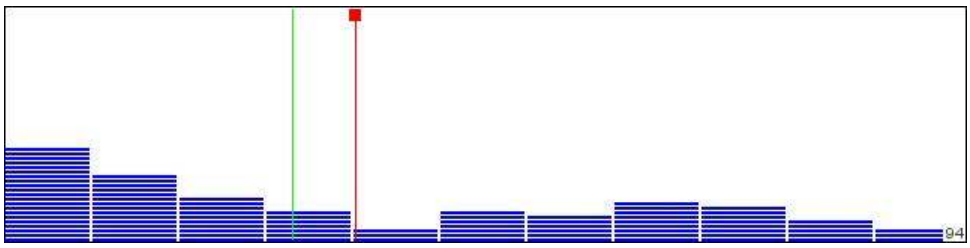

Figure 7

Those contributors who most strongly associate their story as "evidence based" are also more likely to associate the scale of the change as affecting individual practice (rather than module or programme) and to say that "my discipline" or "the world" should pay attention to it.

Reflections on the method

One of the things we found conducive about this analysis was that it took no account of researcher bias[ii]. So, for example, when we found an association between "managerial change" and "teaching-intensive institutions" we could (and did) think "Oh yes. We could have predicted that". When we examined the stories that were collected under the signification "evidence based" however, there was – to us – no rhyme or reason for them belonging together. But our contributors were not trying to trick us: for them, their stories represented an evidence-based approach. In this way, SenseMaker™ analysis forced us to examine our assumptions more closely than usual in traditional researcher-interpretive analysis (such as coding/tagging the data).

For example, we had constructed the polarity *evidence-intuition* with the implicit idea that an evidence-base would be external, perhaps drawn from books or research papers. In fact only five of the twenty stories in this cluster shared our interpretation, and referred to this sort of influence, for example:

> I read about an online learning management system in a journal [CS59] [iii]

> At ICER 2007, I attended a talk by Michael Caspersen and Jens Bennedsen on their paper titled, Instructional Design of a Programming Course - A Learning Theoretic Approach. I was impressed by their research using videos of worked examples and programming exams to improve students learning in CS1 [CS82]

Nine stories reported change resulting from observation of students, either as a response to poor performance, or complaint, or in recording improved performance attributed to a specific intervention. So, for these contributors, the evidence they adduced was student behaviour or performance.

For another three, change was attributed to the influence of a colleague.

> A sample of marking is always reviewed by a fellow academic. I'd been marking quite successfully with good feedback from students that the comments were helpful however my peer commented that I might like to try focussing much more on feed forward advice so that the student could make specific improvements in approach for future assignments. Incredibly helpful. [CS16]

In the remainder (a further three), change arose from a personal insight, subsequently validated by improvements in teaching and learning.

> I was teaching a course on computer architecture for the sixth and final time. This is a third year course, potentially the final year for all (they could choose between a 3-year and 5-year degree). I was really bored and decided I had to change the way I taught the course ... Three of the students told me, years later, after graduating, that this was their best learning experience ever. I learned from this experience to trust the students, to ask them for their opinions, to get them involved in their own education, to challenge them, and to work with them. My teaching methods and principles changed forever. [CS87]

Thus, this cluster of stories represented a much wider variety of meanings that contributors had for "evidence-based" than we would have anticipated: external resources (books, journal papers etc.), data from students (observation, or performance indicators), input from colleagues, and insights corroborated by evidence from later events.

Textual analysis

Nevertheless, we found that we had questions of the stories that our SenseMaker™ analysis could not address. We wanted to ask what had *triggered* the change that the stories reported, we were interested in what *sort of changes* they described, we were curious as to whether change was comparable, even though the contributors came from greatly different contexts. To look at these questions we undertook a more traditional qualitative analysis, taking the story texts as our data. Three researchers independently coded the stories, each explicitly seeking the catalyst for the change and noting other aspects according to individual interest and inclination[iv]. Categories of catalyst were shared and discussed in mutual debrief. Whilst there were different emphases, the categories were comparable. For example, the change catalyst in one story was separately coded as "external influence within the discipline (EID) + peer (P)", "observing a colleague", and "influential individual". These categories had commonality in that they all recognised the catalyst was another person, and a person that the contributor did not work with on a day-to-day basis. We did not,

therefore, argue the categories to consensus, but worked with their separately nuanced constructions. Here we report here on the major categories of catalyst we identified.

Seeking solutions

The first, most notable, observation was one of absence. Across all the stories, there was only a single narrative that displayed a conscious "seeking for a solution" behaviour.

> So I decided to change what I was doing, and looked around for what might work [CS9]

The absence of conscious solution-seeking may be explained by the nature of our prompting question, in that the prompt does not emphasise an existing situation, but a process of change: *Can you think of a time when something—an event, an article, a conversation, a reflection, an idea, a meeting, a plan—caused you to make a change in your teaching? What was it? What happened?*

However, the "seeking solution" behaviour is one commonly attributed to educators. Guzdial and Fossati "… propose to think about an ideal decision-making design process of instructors as composed of three parts: 1. Making a determination that a change is needed. 2. Either finding existing solutions or creating new interventions to address the desired change. 3. Evaluating the effectiveness of the solution and deciding whether to retain it or not." (Guzdial & Fossati, 2011).

It may be that decision-making in teaching, as in other professions, does not involve a problem-solving approach of incremental consideration of each step. It may more closely represent naturalistic decision-making, where professionals make non-analytic choices in situations marked by time pressure, high stakes outcomes, inadequate (or missing, or unreliable or ambiguous) information, team and organizational constraints, changing conditions, and varying amounts of experience (Klein, 1998). Whichever construction is a more accurate representation, "seeking solutions" was an extremely uncommon change-behaviour in our data.

Revelation

Because our request was not bounded in scale or time, contributors submitted stories that described change from a single piece of work in a single course to reflections that spanned decades of an entire career. Perhaps because of this open-endedness, the catalyst for change in several stories was a clearly-recalled moment of insight or revelation, often quite a time in the past.

> Coup de foudre: a thunderbolt, a streak of lightning that lit up my skies and changed forever, not only me and my teaching, but also the way in which my students learned [CS27]

> My first 'lightbulb' moment came when discussing tutorials with one of the other ... tutors on the course I was originally hired to teach. [CS73]

In some cases, the insight was the point of a story. The title of CS85 is "An Epiphany" and contains the revelatory moment:

> I remember quite clearly about two years after I started teaching; I was in London for a meeting with my old PhD supervisor. We were talking about our classes and she said "I never do lectures". "Never?" I said. "Really, never? So what do you do?"[CS85]

Such moments were often set in relation to a status quo, a set of assumptions, or state of mind:

> When I began teaching in universities a quarter of a century ago I set students essay titles, because that's what happened when I was a student. [CS15]

> ... initially in my lectures I used OHP slides with no handouts. Much of the time students were merely copying from the screen. This reflected my experience as a student: I often perceived the lecturer as a hindrance – s/he was making it hard for me to concentrate on slide copying. [CS77]

> … it's just I had never seen a class taught this way when I was an undergrad. I didn't know people could do that :-) [CS85]

There were also stories that expected, even anticipated, this sort of change where it was not forthcoming:

> I started sitting in on colleagues' classes, but that didn't help much. I didn't see anything they were doing that was all that different from what I was doing. But I persevered. I wish I could tell you of some epiphany that helped, but I don't think there was one. [CS21]

Daily Bread

The most populated catalyst category was of educators initiating change in response to students: in response to something they did, or something they said, or to a close observation of their attitudes and achievements.

> I found that almost all the students who had gotten the "differentiate using the chain rule" question wrong had done terribly on the exam, and almost all the ones who had gotten it right had done quite well. After that, I doubled the amount of time spent teaching the chain rule. [CS5]

> On a data structure and algorithms exam, I frequently gave students recursive code to do something in a binary tree and asked them to give me the output (there was typically some numeric calculation). I would get 80% incorrect answers. I observed that students would show very little work. I changed the instructions to the problem to include showing the execution tree. Making students show their work flip-flopped the percentages. Typically 80% get correct answers now. [CS18]

> What made me change my practice is a student reminding me - "I have never done this before, I don't know what you want". [CS13]

> The most recent experience I have of changing my practice comes from student feedback - some formal and some informal [CS26] (The title of this story is "Module Evaluations Work!")

> One student said “it will be so much better and easier when we are doing this for real” As a result of this comment I changed the whole approach to the module, [CS61]

Although sometimes the student-focussed catalyst was negative:

> But when I looked into their eyes halfway through the introduction I could see that a 15 month old example was no longer topical - indeed most had never heard of something that had been a lead news item a short while ago. I rescued the class by managing to work in a more recent example. But the experience was a bit of a shock. [CS20]

> I had a student come to my office during my first term teaching. She was having a hard time in her 2nd year of University, was shifting from Science to Social Sciences, and was struggling. She was in an introductory Human Geography class, and she felt lost, not connecting to the material. We were touching on international issues, and she admitted to me that she JUST DIDN’T CARE. I was stunned that she was so honest, and could not respond to her honesty with anything but compassion, even though I was at a loss to imagine how an intelligent person could be so disconnected from social and environmental injustices and suffering that were our topics.[CS31]

Other catalysts of change

Many stories (13) report the influence of a named individual as causing them to change their teaching. For as many (18), participation in an event, or external training, or “getting out of the classroom” made the difference although often these are not reported as intentional acts, rather in a sense of primed serendipity: “I attended a keynote lecture about learning preferences” [CS25] , “I was reading a book and stumbled upon a quote that was written in one of the margins” [CS40], “In the toy store, wandering about, I saw some baby toys called ‘bear links.’ That reminded me of the linked lists I was supposed to be worrying about for class ... so I decided to get them and use them in class.”[CS53]. Finally, a least populated category was “external imposition” represented by only one story, entitled “Forced to conform” [CS11].

Informing change

An additional analysis of the change stories was conducted to learn more about how educators determined the *details* of their pedagogical change, regardless of the catalyst. In all but one of the stories (the “external imposition” story above), educators were in a position to control at least some of the details of the change they described. Our earlier analysis revealed that few stories reported the sort of deliberate search for solutions that had previously been hypothesized, so how *were* educators informing decisions about pedagogical change? We classified the stories based on the source of the change details, and the techniques used by instructors to find their source.

Sources

In just over half of the stories (50), the instructor formulated the details of their pedagogical change entirely on their own, without consulting peers or other resources. The abundance of “local change” stories is perhaps not surprising given that “change in response to students” was

found to be the most common catalyst category. One might expect these sorts of changes to be relatively small in scale, making it less essential that the teacher involved seek outside council. Additionally, changes made in response to student feedback are often tailored to local circumstances (the constraints of a classroom or the structure of a curriculum), making it less likely that a literature search will discover useful interventions. All of the change stories quoted in the Daily Bread section fall into the "local change" category. Not all locally formulated changes were the result of student feedback, however. Many were the result of reflection on the part of the instructor:

> The original format was that the assessor would fire questions at team members about the work. I thought this approach would disadvantage anyone with limited understanding of English so I changed the format. I put more time into setting up the assessment, giving information about the areas to be assessed and asked the students to take responsibility for the walkthrough and who would be explaining sections of the documentation. [CS63]

> When the instructor who normally taught the class left, we were left with no one to teach it. I was one of two professors who decided to try teaching the course. Having been trained technically as a computer scientist, I was familiar with how to teach programming, data structures, etc., but it became clear to me that teaching students about ethics and the societal impact of computing would require a completely different style of teaching. I determined that it would have to be more discussion-based, readings-based, and writing-based. [CS57]

> Given the nature of the module we decided that it would be appropriate for students to keep a blog about their learning on the module and we made this part of the assessment. [CS23]

Other changes were driven by external circumstances.

> Several years ago, I taught in a classroom with no white or chalkboards. So that I could write examples for the students, I started using a tablet PC and Classroom Presenter from the U. of Washington. This has evolved into a set of "guided slides" that are partially completed that I finish in lecture, and posted soon thereafter. Students routinely report that this approach is better than pre-completed slides. [CS50]

In the remaining stories, authors reported obtaining change details via interactions with other educators (39 stories) or from published materials (8 stories). The mechanisms through which these sources were located are explored in more detail below.

Transmission

As was reported above, instructors rarely searched for information on change details: There were only three stories involving search, two of which described finding information in published materials while the third found guidance from a presentation:

> I was faced with designing a new grad AI course, but I did not look forward to straightforward lecturing from the book, so I looked for alternatives. I came across an article by L. Dee Fink, "A Self- Directed Guide to Designing Courses for Significant Learning", and I also read the book "Drive" by Pink, on self-determination theory. I followed Fink's design exercise while applying SDT principles. [CS86]

> My response was to study the various disciplines that encompass learning science. Much is known about learning, and how we can support learning. I discovered that I had not been doing a good job in the classroom. I also found that the standard textbooks for my field don't support learning well. [CS38]

> I decided to change what I was doing, and looked around for what might work. I happened to go to a session on teaching using case study and so decided to try a case. I searched for some, but in the end wrote my own, brainstorming the ideas with my colleagues. [CS9]

At the other extreme, 12 stories described changes resulting from chance encounters with educators who shared or demonstrated details of their teaching practice. The authors of these stories had not intended to change their practice until they were exposed to a new approach.

> I never would have made this change if it weren't for a trusted friend who told me to do this and I was sort of convinced. The change was to go from more or less traditional lecture with a handful of active learning activities punctuating it, to a completely or almost-completely question-driven style with peer-instruction. [CS70]

> When I started university teaching I was very 'controlled' - all "chalk & talk". It took my colleague to loosen me up! We did team teaching together and he regularly inserted activities, interactive tasks, buzz groups, video snatches for students to comment on, role play, group work etc. Basically, the 'scales dropped from my eyes' and I saw how valuable these more discursive, open-ended, student-centred approaches were; and how memorable they were to us & to the students alike. [CS99]

The change in the examples above resulted from unplanned interactions between instructors. A larger group of change stories (31) involved *primed serendipity*, where the author encountered unanticipated information but while putting themselves in situations where they could reasonably expect to learn *something* about teaching practices (*e.g.* attending a conference or workshop, or browsing a journal issue). In five of these stories the author draws upon published materials to inform their change in practice. The remaining 26 involved personal exchanges with groups or individuals.

> Several years ago I read a book titled "Beyond Bullet Points" by Cliff Atkinson that kept mentioning Richard Meyer's work on multimedia learning theory. I read several of his papers and his book as well. Over a summer I revised all of my CS1 slides to incorporate his multimedia learning principles. [CS56]

> I participated in a course on Teaching with Technology. Although I had always used technology where I could, this course exposed me to dozens of different tools and uses for these tools in the

classroom. I now incorporate many of these tools in my teaching and also keep abreast of new developments by following blogs of others involved in the same process. [CS12]

I was travelling on holiday to Italy. I had taken Jenny Moon's book on reflective practice, just to re-read on the journeyings and waitings. There was quite a lot of waiting. I chanced on mention of a teacher who had shared his own learning journal with his students. I knew that my Soc Sci students initially had problems with reflective journalling. I thought "Why don't I share mine with them?" [CS68]

I'm a member of a science education reading group on campus. One of the papers recently was on how to evaluate your assessments (specifically tests/exams). One person in our reading group was a psychologist who researches "psychometrics" and does extensive quantitative test analysis for her courses. Based on her experiences and advice, I was inspired to go over a test I was in the process of writing for my CS0 course the following week. I reworked the exam to balance the material and more closely mirror what I wanted to assess in the class. This is now a standard practice before I give exams. [CS95]

Use of published materials

The infrequency with which change stories refer to published materials is noteworthy. Books or articles informed change in only eight stories, despite the fact that part of the solicitation was via education research mailing lists, and a number of the stories were collected at an education-related conference. Over 90% of the stories described changes that were either created without drawing on outside sources, or were informed by personal interactions with other educators in preference to the literature. Even within the small group that drew from published materials, the majority found their source through primed serendipity instead of deliberate search.

Closing thoughts

Stories are a relatively unusual form of data for this sort of investigation. They are not responses to direct questions (as in interviews, surveys or questionnaires), they do not represent opinions on issues, nor statements of fact. They are, however, authentic communications which illuminate complex topics, and which can provide insight into complex spaces. There is always a point to telling a story, a reason for their emergence, something the teller wants to communicate.

Stories also have an effect on the audience “The act of listening to a story told by another person creates a … displacement of perspective that helps people see through new eyes into a different world of truth”(Kurtz, 2010). The power of this collection of stories is demonstrated in their content, in the things the storytellers wanted us to know. And what they contributed were stories of success, of change making an improvement, most often an improvement to student learning. They also conveyed an abiding sense of personal satisfaction, of professional pride, of overcoming challenge and disappointment, in doing a good job. And in this, the contributed stories were entirely comparable even though they were from different countries, institutional contexts and academic disciplines.

Acknowledgements

We are grateful to all the educators who shared their stories with us.

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[ii] Although, of course, in setting the analysis framework in advance (specifying the dyads and triads) we asked about things we were interested in, or thought might be relevant, and missed anything else.

[iii] All quotations are from submitted stories. Stories are referenced CS – for Change Story – and a uniquely identifying number.

[iv] Thus one of us, Finlay, was interested to note the outcome of the change, whether it was positive or unsuccessful, whereas Sharp extracted the focus of the change, whether materials, or perspectives, or technologies; Fincher was concerned with the ongoing relationship that the educator had to the changed practice.