Stories Count: Narrative Approaches to Quantitative Learning

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Abstract

Stories Count: Narrative Approaches to Quantitative Learning is an interdisciplinary approach to education, communication, personal development, and creativity that uses the essential kinship of verbal and mathematical/logical/quantitative systems of coding and decoding to help people think, reason, understand, communicate, and create. *Stories Count* workshops are anchored by original narratives (stories) having significant math and logic embedded in their structure and in their content. The result is that listeners enter into the stories, engage with the narrative form, and simultaneously "do the math." They realize that they can master new and unfamiliar codes as readily as they manage codes in their comfort zones. This workshop program includes storytelling performance by the workshop leader, an interpretive and analytic discussion of the narrative by all the workshop participants, and an opportunity for the participants to explore how they use codes, symbolic structures, and patterns in their own work. In addition, participating in the workshop may lead them to bring *Stories Count* into their own classrooms, programs, and creative projects.

Learning/Discovery Objectives

- To explore the operational kinship of verbal and mathematical/logical/quantitative codes, structures, and patterns
- To enable people to transfer comfort and competence in one domain to the other
- To identify and analyze those codes, structures, and patterns we already use in our work and those that challenge us to new explorations and achievements
- To recognize and develop new ideas, new patterns of meaning, and new connections among established ideas and knowledge
- To demonstrate how narrative can align with other forms of expression and conceptualization and can facilitate learning, communication, personal development, and creativity

Background

Stories Count: Narrative Approaches to Quantitative Learning is an interdisciplinary approach to education, communication, personal development, and creativity that leverages the essential kinship among verbal and mathematical/logical/quantitative systems of coding and decoding to help people think, reason, understand, communicate, and create. *Stories Count* are original narratives that I develop to be told, analyzed, and discussed in participatory learning/discovery workshops, which the stories anchor.

The narratives at the heart of *Stories Count* are simultaneously verbal and mathematical/logical/quantitative compositions. They have memorable characters, inviting settings,

intriguing plots, and all the other traditional features of narrative. They also have math and logic embedded in their structure and in their content: huge numbers that can become large without limit; binary decision-making; chance, probability, and certainty; classical paradoxes and more. The result is that listeners enter into the stories, engage with the narrative form, and also exercise quantitative capabilities beyond computational skills as they "do the math." For people who think they are either verbal or quantitative but not both, the stories help transform strength in one domain into competence in the other. In addition, the stories always invite analysis, critical interpretation, and creative thinking and so they engagingly, comfortably, and immediately lead to a participatory experience that complements the performance/listening, which begins and ends each workshop. Workshop participants can expect to develop new insights, new perspectives, and new connections among concepts they already understand.

Many concerns, experiences, and ideas provide the basis for *Stories Count*. As a math major, a math teacher, and a veteran of the corporate workforce with over 30 years of experience in developing, supporting, and managing corporate computer projects, I know from my experience the value of the mathematical/logical way of thinking, which is convincingly documented in materials published by the National Numeracy Network on its website; see [4]. As a math teacher, and even as a successful learner of mathematical and logical material, I also know first-hand the great resistance people can have to math and logic, whether due to math anxiety (see [7]), matters of style and preference (see [2]), or other causes. Finally, as a student of literature and a performing storyteller, I know that a good story, well-told, can reach the human ability to make sense while attention is focused externally, on the story, not on the encoding medium, or on the psychological process of constructing meaning; see [6]. Having communicated ideas about quantity, equality/equivalence, and logic in the course of telling a story, I recognize the phenomenon that Roland Barthes examined in *S/Z: An Essay* (see [1]), namely how the mind moves among codes; and I know the thrill of eliciting that movement in my listeners.

To see me perform a *Stories Count* narrative based on a binary logical scheme, as suggested by John Allen Paulos (see [5]), please visit YouTube: http://www.youtube.com/watch?v=lJ0qjCCm-kY ; see [3].

A *Stories Count* workshop typically begins with introductions and formulating/stating goals for the workshop. Then I tell/perform a story. Next the group discusses the story. The discussion always addresses the embedded mathematical and logical content—my agenda—as well as any literary, philosophical, cultural or other observations, issues, or topics the other participants introduce. Either combined with the discussion or following it, a more focused discussion, a question-and-answer session, a worksheet, a brainstorming activity, a storytelling game, another exercise, or a combination of these activities addresses the theme of the workshop (example: specific math topics for an Overcoming Math Anxiety workshop). We debrief by articulating takeaways. Finally, I tell/perform a concluding story to end the program. At the Bridges Conference, we will address how we use codes, structures, and patterns in our own classrooms, programs, and creative work, and we will look for connections, insights, and challenges that can help us improve and move forward. Suggestions and requests for topics and for content to develop into new *Stories Count*, and any other questions/issues the stories and discussion might raise will also be encouraged and welcomed.

The workshop will also demonstrate application of the *Stories Count* concept and program. The large and ever-growing *Stories Count* repertoire includes stories and invites discussions to engage learners at different age levels and with a range of interests and concerns. *Stories Count* can subvert math anxiety, encourage insight and creativity, and reinforce connections and convergences that align different symbolic systems. *Stories Count* can be a powerful addition to any teacher's, educator's, or explorer's toolkit of approaches and techniques.

Workshop Experience

Workshop Title: *Stories Count: Narrative Approaches to Quantitative Learning*

Workshop Components:

- Live telling by presenter of original stories with embedded mathematical/logical content.

- Discussions of the introductory story, to include review and explanation of the math/logic.

- Exploration of the codes, structures, and patterns that workshop participants use in their own work. Identification of related and/or contrasting approaches to explore. This activity will begin with worksheets and will move to debriefing in pairs or small groups, question-and-answer, or other activities as permitted by time and by the size, interests, and learning/interactive styles of the participants.

Sample workshop agenda (60-75 minute program):

Topic	Description	Time
Introduction	We'll introduce ourselves to the entire group or in pairs/small groups and state why we're attending and our goals/what we hope to get from the program. I'll briefly describe the program and review the agenda.	5- 10 minutes
Narrative Opening (Live Storytelling)	I'll tell an original math-and-logic-laden story.	10 minutes
Group Discussion	We'll discuss the story. I'll moderate. We'll discuss any aspects the group wants to explore. I'll make sure we address any awareness of the math/logic that the participants recognized during the telling and how the math/logic patterns work within the narrative.	10-15 minutes
Personal Applications	Participants will receive and be asked to complete a worksheet/questionnaire designed to help them identify and analyze the codes, structures, and patterns they use in their work and to explore new possibilities. If time permits, and depending on participant preferences, we might discuss insights and possibilities in pairs or small groups or explore them in another interactive way.	20-30 minutes
Summary	I'll ask for each participant (including me) to note a learning takeaway. We'll tell the takeaways to the entire group or in pairs/small groups as appropriate.	5-10 minutes
Narrative Closure—I'll tell another story, to close.	Also with embedded math/logic. There won't be follow-up discussion of the story in this session, although there can be discussion later or "off-line."	10 minutes

Presenter Biography

I'm an experienced computer programmer and system designer, a Project Management Professional (PMP), an interpreter of narrative and texts, a veteran teacher of mathematics and of literature, and a storyteller. I'm grounded in technology, the sciences, and the humanities and equally at home in the worlds of business, academe, and performance. I bring this diversity of interests and perspectives to new experiences, environments, and associates wherever I go.

As a designer, developer, and manager of software systems, I've worked with diverse stakeholders—clients and customers, frontline staff, managers, executives, and technology professionals—throughout the retail, financial, manufacturing/distribution, and healthcare industries. I've developed and presented corporate training programs. I've designed and taught academic classes in mathematics, humanities, and critical thinking to students at all levels from middle school through post-graduate, both on-line and at bricks-and-mortar institutions including inner city community colleges, 4-year colleges, and elite universities. I also perform traditional, literary, historical/biographical, and original stories at folklore and storytelling festivals, public concerts, and private events.

I was educated at the University of Illinois, Mills College, and The Johns Hopkins University, and I hold a doctorate in Humanities/Comparative Literature as well as an MBA. I've also studied mathematics at the post-graduate level. I'm certified by the Project Management Institute (PMI) as a Project Management Professional (PMP), and I'm an active member of many professional and cultural organizations including the PMI, the International Institute for Business Analysis (IIBA), the National Numeracy Network, the National Storytelling Network and its Storytelling in Organizations special interest group, Illinois Storytelling, the Northlands Storytelling Network, the North Shore/Nature Center Storytelling Guild and the Fox Valley Storytelling Guild.

References

[1] Roland Barthes. *S/Z: An Essay*. Trans. Richard Miller. New York: Hill and Wang, 1974.

[2] Howard Gardner. *Multiple Intelligences: The Theory in Practice*. New York: Basic Books, 1993.

[3] Suzie Garfield. *How to Govern a Kingdom, Part 1*. http://www.youtube.com/watch?v=lJ0qjCCm-kY.

[4] National Numeracy Network. See http://serc.carleton.edu/nnn/resources/index.html.

[5] John Allen Paulos. *Innumeracy: Mathematical Illiteracy and Its Consequences*. New York: Vintage Books, 1990.

[6] Ferdinand de Saussure. *Course in General Linguistics*. Ed. Charles Bally and Albert Sechehaye with Albert Riedlinger. Trans. Wade Baskin. New York: McGraw-Hill, 1959.

[7] Sheila Tobias. *Overcoming Math Anxiety*. New York: Norton, 1993.