

**Storytelling in Health Behavior Research:
An Adolescent Health Risk Data Collection Conundrum**

Robert F. Valois, MS, PhD, MPH*

Sarah H. Kershner, MPH, PhD

Jelani C. Kerr, MSPH, PhD

Andre Walker, MPH, PhD

Debra Massey, MSW

Naomi B. Farber, MSW, PhD

Larry K. Brown, MD

Michael P. Carey, PhD

Ralph J. DiClemente, PhD

Daniel Romer, PhD

Peter A. Vanable, PhD

ABSTRACT

Storytelling is as old as humankind predating any other form of oral history. Instructional methodologies used by teachers include fables, parables, legends, myths, and real-life stories conveying important instructional cognition and affect. This paper briefly discusses the scientific foundations and use of storytelling for effective instruction and shares a real-world story of conflict involving adolescent psychosocial and biological data collection, a principal investigator and a church youth director. A review of literature synthesized storytelling from a variety of scientific perspectives. This health behavior research story is framed via the essential elements of a story and told via the perspective of the principal investigator. Storytelling is effective at the higher levels of the cognitive and affective domains of Bloom & Krathwohl's Taxonomy of Educational Objectives and rooted in neuroscience, psychology and educational psychology. Personal stories are a relevant strategy connecting learning material with situations outside the classroom. The human brain responds to hearing, reading or viewing a story, similar to real life processing as a genuine life experience. This story is anchored to NIH study protocol, a data collection incident at an African American church and a perplexed PI and research team. The problem-solving process and resolution of the story conflict are described. Implications for instruction in health behavior research, community-based participatory research and program evaluation are discussed. Overall, storytelling increases learner interest, and interaction, making content personally relevant and easier to remember. Storytelling is the bedrock of the learning process and the foundation of the teaching process and profession.

Keywords: storytelling; health behavior research data collection; adolescent psychosocial & biological data collection; African American church collaboration; church culture & conflict; research team problem-solving

*Corresponding Author may be reached at RValois@mindspring.com and RFValois@mailbox.sc.edu

“Tell me a fact and I’ll learn. Tell me the truth and I’ll believe. But tell me a story and it will live in my heart forever.” -Indian Proverb-

Introduction

The most powerful words in the English language are “*tell me a story*,” words that are intimately related to the complexity of history, the origins of language, the continuity of the species, the taproot of our humanity, our singularity, and art itself (Conroy, 2010, p. 303-304).

Storytelling is as old as humankind, predating any other form of oral history (Zabel, 1991). For thousands of years tribes, clans, families, communities and societies have instructed and communicated imperative principles through storytelling (Brady, 1997; MacDonald, 1998). Storytelling was the only way to convey a society’s history, culture and values, for societies without a written/documented language. Instructional methodologies have been used by effective teachers and great leaders in the form of fables, parables, legends, myths, and real-life examples to convey important instructional cognition and affect (Brown & Duguid, 1998; Davenport & Prusak, 1998; Leonard-Barton, 1995). Fictional and non-fictional examples have, and always will be, powerful teaching tools. Storytelling as an instructional methodology is still heavily utilized in today’s teaching. Medicine, public health, social work, health promotion & education, psychology, military science, aviation, and business, among others are disciplines significantly utilizing storytelling as a method for teaching key theory and principles of their respective disciplines helping to develop analysis, synthesis and evaluation skills in students and trainees.

A review of literature suggests numerous definitions of “*story*” with two being appropriate here. Denning (2009) notes that, “A narrative or story in its broadest sense, is anything told or recounted; more narrowly, and

more usually, something told or recounted in the form of a causally linked set of events; account; tale: [sic] the telling of a happening or connected series of happenings, whether true or fictitious.” Labov (1972) defines a narrative or a story “*as one method of recapitulating past experiences by matching a verbal sequence of clauses to the sequence of events*” (p. 359–360) and at a minimum a “*sequence of two clauses which are temporally ordered*” (p. 360).

People everywhere have a basic need to share stories. Stories record important happenings and organize experiences. As common forms of discourse, stories are of great interest and significance in language and literacy development, especially when considering the increased linguistic and cultural diversity of learners. Stories also enable teachers to learn about their students’ cultures, experiences, and meaningful relationships. Through the sharing of stories, teachers and learners “*create the potential for new connections that link them together inside a new tale*” (Dyson & Genishi, 1994). Stories we tell help define our socio-cultural landscape in unique ways and demonstrate the nexus among language, culture, and power (Dakhtin, 1981).

People tell stories in an attempt to come to terms with the world and harmonize their lives with reality (Flowers, 1988). Stories have been used since time immemorial to record important events, celebrate the feats of heroes and heroines, transmit the spirit and facts of a major occurrence, and point out patterns of human experience and behavior. Storytelling costs nothing, is enjoyable, and can be used anywhere and at any time (Zabel, 1991). Storytelling is a cornerstone of the teaching profession (Zabel, 1991).

The majority of human knowledge is manufactured from past experiences, and new

experiences are fixed within the context of personal stories and personal relevance (Schank & Abelson, 1995). *“In the end all we have are stories and methods of finding and using those stories. Knowledge, then, is experiences and stories. Intelligence is the apt use of experience, and the creation and telling of stories. Memory is memory for stories, and the major processes of memory are the creation, storage, and retrieval of stories”* (Schank & Abelson, 1995, p. 8). From this perspective, it is reasonable to conclude that storytelling may be considered foundational to the profession and process of teaching (Abrahamson, 2006; Valois, 1993; 2025).

A typical story narrates a sequence of events in which one or more protagonists interact with their world, often confronting challenges and attempting to resolve problems in the process. Human capacity for *intersubjectivity* allows an audience for a story, to construct shared meaning, even from distal events and the experiences of others (Landrum et al., 2019). In essence, we learn about life from stories without ever physically leaving where we are or experiencing the perils and pitfalls that engage the protagonists. Bruner (1990; 2002), notes that stories impose structure on our life experience and are essential tools for cultural learning and reflection. Stories and their associated narratives provide the means for learners to make sense of their world and create their sense of self. *“Through narrative,”* Bruner (2002) suggests, *“we construct, reconstruct, in some ways reinvent today and tomorrow”* (p. 93).

Rationale for Storytelling as an Instructional Technique

In regard to the art and science of teaching, the *raison d’etre* for stories/storytelling is to: 1) create interest; 2) provide a structure for remembering course content; 3) share information in a familiar and accessible form; and 4) create a more personal student–teacher connection (Green, 2004). In essence, stories enhance the learning process by enhancing

learner interest, interaction and making content personally relevant (Valois, 1993; 2025). Owing to the universal dynamics of storytelling (Willingham, 2009), comprehension of material presented in a narrative structure is easier, due to the learners internalized understanding of how stories are told. Moreover, by composing the narrative to make the story interesting, topics and highlights become easier to remember.

Storytelling may also enable the student to relate his or her learning to the various problems encountered in day-to-day living. Valuing, problem solving, decision making, and analytical skills should be stressed in Health Promotion, Health Education and Health Behavior because, according to Bloom et al. (1956; 1984), Krathwohl et al. (1964) and Valois (1984; 1993) and Valois et al. (1989; 1992; 1997) because they are retained and used long after the individual has forgotten the detailed specifics of subject matter taught in class. These abilities are regarded as one set of essential characteristics needed to cope with a rapidly changing world (Valois, 1993; 2025).

A well-told story elicits the phenomenon of *narrative transportation*, in which the audience develops the sense of immersion into the world of the story (Green & Brock, 2000).

Researchers strongly suggest that when we extend the power of stories/storytelling to the classroom, teachers can effectively support their students’ learning and engagement in the learning process (Fawcett & Fawcett, 2011; Keehn, 2015; Sheafer, 2017). Oatley (2008) has suggested that stories are the *“flight simulators”* of the human mind interpreting and predicting events in the world that surround us.

Why Does Storytelling Work as a Teaching/Learning Methodology?

Storytelling works effectively as a pedagogical approach owing to concreteness, specificity, and narrative organization. In the teaching context, a storyteller can present material as a mystery, and students will be

naturally inclined to “figure out” the story, thus engaging in the process of sensemaking (Finkel, 2000). Stories have been described as being “psychologically privileged” (Willingham, 2009), meaning that memory for stories is different from memories for different types of information (p. 51). In essence, Willingham (2009) suggests that: *“Remembering is not merely a function of having a good or bad memory. Someone with a “bad” memory can still remember a memorable story. We remember things that are woven together with a plot, are meaningful to us, have a vivid impact on our mind, or made us feel—good or bad. We remember stories that stir our emotions. A good story etches an image into your listener’s mind by linking your words together into a meaningful whole that is vivid and emotionally stimulating. A counterintuitive secret that all good storytellers understand is that the more specific the story, the more universal the connections”* (Simmons, 2006, pp.122–123).

Ruscher (2014) emphasized a three-part storytelling approach: 1) meaningfulness; 2) coherence; and 3) memorability. Fortunately, owing to the subject matter of Health Education, Health Promotion and Health Behavior are often personally relevant, it is not difficult to find topics that connect with the human condition. The practical applications of what behavioral science [health education, health promotion and health behavior] studies have to offer are cognitively and affectively dynamic and wide-ranging in scope and sequence (Farrell et al., 2002; Farrell et al., 2003; Hennessy et al., 2013; Kerr et al., 2013; Romer et al., 2009; Valois, 1984; Valois et al., 1989; Valois, 1993; Valois et al., 1996; Valois et al., 2010; Young & Valois, 2010;).

Additional documentation for the status of stories/storytelling as effective methods of sharing knowledge/information is provided via cognitive science. The human brain has evolved in its ability to process life experiences in sequential scripts, similar to the narrative of a story (Hazel, 2008). Stories offer a mechanism to organize and make sense of

memories that fit this sequential structure. Memory is constructed highlighting some features and having elements of truth and fiction as events are assimilated and maintain narrative coherence within recollections, similar to a story. In addition, intersubjectivity facilitates understanding and the ability to empathize with characters in a story to fill in the untold [or unwritten] gaps in regard to their perspectives. The learner engages in active comprehension as details are filled in and update the representation model of a story’s context in memory, as well as the imagination of possible worlds via the capacity for hypothetical thinking (Foy, 2015; Copeland et al., 2015).

Researchers in neuroscience, at a more basic level of understanding, strongly suggest that the human brain actually responds to what is happening in a story as if it were a genuine life experience. Neuroscience researchers have determined that the human brain responds to hearing, reading or viewing a story, similar to real life processing as a genuine life experience (AbdulSabur et al., 2014; Baldassano et al., 2018; Berns et al., 2013; Kolenda-Sujecka, 2023; Martinez-Conde et al., 2019; Milivojevic et al., 2016). The human limbic system, neurotransmitters, mirror neurons and cortical pathways are engaged in this process. The human experience of narrative transportation is real and tangible, involving multiple areas of the brain. In essence, humans actually do “enter, that other world of a story” (Landrum et al., 2019).

The use of non-directive forms of communication, including stories and metaphors, can also be effective for student counseling via positive transcultural psychotherapy (Kolenda-Sujecka, 2023). Storytelling, neuro-scientifically, has a number of advantageous functions in the student counseling/psychotherapy process facilitating access to content that is inaccessible at a conscious level and acts as a mediator between the patient and the counselor/therapist, allowing resistance and defense mechanisms

to be overcome. The use of narratives can prolong the effects of content discovered during counseling/psychotherapy sessions, can serve as a vehicle for traditions and can act as an intermediary between cultures. Storytelling can be used to trigger the imagination and enable controlled regression while enabling a change of perspective and an alternative view of the world (Peseschkian, 2016). Skillful use of stories, especially those that are emotionally charged, can therefore have a positive impact on the creation of a new “*mental model*” of the functioning of the student’s/client’s world in which counselors/therapists can develop the skills, capacities or behavior necessary from the point of view of the goal of therapy (Kolenda-Sujecka, 2023).

Classroom Narratives/Storytelling: Student Recall, Affect and Attention

Telling a story in class is ingrained in many instructors’ pedagogical modus operandi, as stories/narratives provide students an alternative way to understand course material above and beyond straight lecture, with the added value of finding the story interesting, entertaining or relatable (Landrum et al., 2019; Norton & Nussbaum, 1980; Valois, 1993; 2025). Ochs (1997) defined a “*story*” as an “*individually created discourse element that describes an important event.*” A story can also be referred to as a “*narrative*” defined as a discourse unit comprising “*symbolic actions—words and/or deeds—that have sequence and meaning for those who live, create, or interpret them*” (Fisher, 1984, p. 2). Narratives shared in the classroom can often include an

instructor’s personal tales and story-like accounts of others’ experiences (Downs et al., 1988; Landrum et al., 2019) usually consisting of a plotline that is structured with a beginning, middle, and end (Koenig Kellas, 2015). Downs and colleagues (1988) researching teachers verbal communication, found that on average, instructors offered nine narratives in a 50-minute class. This frequent use of instructor

narratives suggests that instructors believe narratives are meaningful to students and important for their learning (Kromka & Goodboy, 2019).

Research also suggests that instructors who employ a dramatic communicator style when they teach effectively use narratives (Norton, 1983) and have the ability to “*tell a good story*” (Norton & Nussbaum, 1980, p. 572). Research also suggests that students perceived instructors who used narratives as more effective instructors (Holladay, 1984). Instructors may also use narratives as a pedagogical strategy to demonstrate content relevance; the degree to which instruction satisfies students’ personal needs and goals (Frymier & Shulman, 1995). In this regard, Muddiman and Frymier (2009) suggested “*personal stories*” were a relevant strategy serving to connect course material with situations outside of the classroom (p. 135). Research on instructor use of humor also suggests that instructors could include relevant and appropriate humor into stories for positive student outcomes. Instructors who employ humor in their lectures, including the use of funny stories, have students that rate their classroom experience more positively (Torok, McMorris, & Lin, 2004) and report learning more from these types of instructors (Wanzer, Frymier, & Irwin, 2010).

Koenig Kellas (2015), suggests that narratives help organize complicated and confusing ideas into “*manageable packages*” to better allow individuals to make sense of these ideas (p. 254). Instructors may be able to provide more of these manageable packages of information to their students by incorporating narratives into their teaching. In turn, when an instructor tells a story in class, they may be repackaging potentially perplexing lesson content making it easier for students to comprehend and remember. With this “*manageable package*” and “*repackaging*” concept, students may experience interpersonal modifications [i.e., modifications in one’s own meaning-making due to others’ perspectives] (Duck, 1994) via

the influence of instructor storytelling. In this regard, listener/learners seek to “*match*” what they are being told to thoughts or impressions previously stored in memory to confirm previously held beliefs (Schank & Berman, 2002, p. 292). If a student processing a narrative in class cannot make this match, they may revise their own beliefs and learn something new from the instructor’s use of storytelling.

Interpersonal research suggests that learners who listen to stories could insert themselves in the shoes of the narrator and respond with affective processing results such as positive tone and agreement (Koenig Kellas & Kranstuber Horstman, 2014), illuminating the potential of storytelling as a methodology appealing to the emotions of learners (Martin, 2000) connecting and emotionally engaging with others (Chafe, 1990). These concepts are supported by Krueter and colleagues (2007) noting that narratives may influence learning in the affective domain (Krathwohl et al., 1964), anchored to the “*principle of internalization,*” by connecting to emotional matters and providing surrogate social connections. Affective tone and inflection utilized in storytelling can imply emotional significance employed to engage learners and emphasize an important concept or idea (Baerger & McAdams, 1999).

An important dynamic that adds value to storytelling and/or hearing is the goal of the narrative in the learning process (Schank & Ableson, 1977) owing to the fact that learners pay more attention to stories that relate to their own personal and/or professional goals (Schank & Berman, 2002). Should the instructor’s goal of sharing a story is to assist student learning, and this goal matches up with a student’s desire to learn the lesson content, this process should assist in sustaining student attention. Storytelling may also facilitate attention sustainability via interpersonal means. That the use of narratives assists students to experience a reflective process, vis-à-vis their own lives in an effort to relate to the instructor’s story, ultimately raising student

awareness to the content of the lesson, has been argued by Alterio and McDrury (2003). Moreover, Gerrig (1993) asserted that the temporal ordering and semantic structure of information in a story functions as an attention-focusing mechanism. Since a story is typically structured with a beginning, a middle, and an end, students may sustain their attention to an instructor’s narrative because they are anticipating the narrative’s conclusion (Gerrig, 1993; Koenig Kellas, 2015), which may increase students’ reports of sustained attention.

Instructor narratives may assist students with “*indexing*” important lecture material so that the information is more readily retrievable at a later date. Indexing is similar to Koenig Kellas’s (2015) concept of “*manageable packages*” (p. 254), in which instructors may be able to use narratives to repackage abstract lesson material to making content more understandable and memorable for students. Prior research suggests that learning through storytelling is more retrievable and memorable compared with learning via lecture (Bruner, 1990; Schank & Berman, 2002) because students “*remembered the facts anchored to the stories*” (Davidhizar & Lonser, 2003, p. 218).

Hokanson and Fraher (2008) strongly suggest that learners have an inherent comprehension of storytelling structure and implicitly understand their role in the instructor’s story. Narrative structure could allow students to contextualize key ideas and apply them to events in their own lives (Andrews et al., 2009). In essence, narratives may be functioning as a methodology to triage the less important information from the more important course content (Downs et al., 1988; Hokanson & Fraher, 2008). When students are able to recognize and recall relevant information, they are moving toward higher levels of cognitive processing and meaningful learning (Anderson & Krathwohl, 2001). Valois, Ory & Stone (1989) found in personal Health Education, that a relationship does exist between the cognitive and affective

taxonomies, they are parallel in nature and there is an intimate relationship between cognitive learning and affective internalization. This relationship exists at the knowledge/receiving levels as well as the analysis-synthesis/organization levels. It should be noted here that the effectiveness of storytelling as an instructional methodology is grounded primarily in neuroscience, psychology and educational psychology and influenced by other fields of study (Valois, 2025).

Uniquely featured in storytelling for educational purposes, is the advantage and ability to emotionally engage the learner. Narratives typically involve some emotional component that creates an affective tone [e.g., tension, suspense, drama, anticipation, humor] in which the learner can empathize (Baerger & McAdams, 1999). As a result, it is possible that students may report increased affect, which is “*a feeling tone, an emotion, or a degree of acceptance or rejection*” (Kratwohl, Bloom, & Masia, 1964, p. 7). Moreover, from course evaluations, students have reported that teachers who consistently shared stories were “*among the best teachers I have known*” and that their courses were “*among the best I have taken*” on a scale of teacher effectiveness (Norton & Nussbaum, 1980). The use of instructor storytelling may generate positive student feelings, thus leading to increased affect for the instructor, the course and the course content. Ultimately, storytelling for educational purposes needs to have structure and at least the basic elements that constitute a good story.

Structure of a Story: Essential Elements

Storytelling is an artform. A good narrative wraps itself around the listener and transports the listener into its world. A good story can linger in the mind long after it’s over while the main characters are people you think about when reminded. As noted earlier, the very basic elements of a story usually consist of a plotline that is structured with a beginning,

middle, and end (Koenig Kellas, 2015; Santarcangelo, 2014). A review of literature suggests that a good story has between five and ten essential elements. It should be noted here that this body of wisdom caters to beginning writers [novelists] versus the stand-up classroom teacher sharing a story to enhance a lecture or illuminate a concept or a principle. However, the similarities between effective academic storytelling and creative writing are self-evident (Kromka & Goodboy, 2019; McAdams et al., 1997; Truby, 2008). In turn, for one-on-one or classroom storytelling, the following essential elements are suggested and briefly described below.

Conflict - Conflict is by definition, some type of controversy or turmoil—a challenge to overcome, a quest, mystery, or struggle. Conflict creates drama, and drama encourages a listener to engage in the story and pay attention (Crnkovich, 2024; Ingov, 2024). Conflict is what drives the characters forward. It’s what puts characters in entertaining positions that force them to grow or regress over the course of the story. Without conflict the listener is left with a scene where everything is just fine, and nobody is in trouble or in conflict, hence, nothing is exciting and not engaging (Bromley, 2022; Jenkins, 2023). Essentially there are two major *types of conflict* that make a great story. First, there is *internal conflict* that happens inside the characters’ heads and hearts. The second type of conflict, *external conflict*, affects the characters as well but is outside of their own heads and hearts (Drew, 2023). Both types of conflict usually take place throughout three basic parts of any story’s main conflict structure: set up [beginning], rising action, and the climax [resolution] (Kafalenos, 2010). Conflict can often be anchored to the “*Unholy Trinity of Human Endeavor*,” power, money and sex, individually or all three synergistically (Valois, 1993; 2025). Conflict is usually anchored to work, school, recreation, family, friends, co-workers or community, among others.

Setting/Context – A good story places the listener at the heart of its scenes. For a story to have a chance at making a point, it must eliminate all extraneous details, focus on one overall setting and on one group of characters who have a good reason for being there (Crnkovich, 2023; Truby, 2008). It is very difficult to induce a believable feeling of reality if the wrong people show up, or if the setting/context of the story is out of place. Why is the story happening here? Why are these characters here? And what is so special about this time, this season, this place, and the events that seem to be happening? The old saying goes that “*if you want to melt some metal, the heat needs to be concentrated.*” In similar fashion, a story can only heat up if the events are contained with boundaries of some sort. Good stories can be “*framed*” by many things such as a time period, adolescence, adulthood, life in the military or at college, summer camp, church activities or the workings of a small group of people organized for a purpose (Crnkovich, 2023; Truby, 2008). The size of the setting is not as important as how there must be a brief but well-described setting. Make place/setting a character. Give a building, a street or a city personality in its description. Give setting something out of the ordinary to make it more interesting and appealing to emotions. If a story is about a real, historical or contemporary place in particular, depict the landmarks. Describe briefly the demographics, the underprivileged areas and the rich ones. Note what the place is celebrated or infamous for. Details, contrasts and contradictions give cities, towns and villages as well as houses, churches, schools and places of business their vibrance and their complex social life (Kafalenos, 2010; Houghton, 2012).

Characters – Memorable and effective characters usually have one or more of the following characteristics: unique voices, personalities and expressions; intriguing [or baffling] goals, aspirations and motivations; flaws and weaknesses as well as strengths and

positive attributes; and distinctive appearances [body and language, accent, gait and mannerisms]. Note that appearance comes last. Key to making a story good is creating characters you would remember if you stood next to them in line and had a brief conversation, even if only for 15 minutes (Bromley, 2022; Ingov, 2024; Jenkins, 2023). Part of a memorable voice is created by a character’s origin. Do they use regional dialects or sayings that mark them as being from a particular place? Are their voices soft or loud? What sorts of expressions and slang do they use? Like their voices, characters’ goals and motivations should be wholly their own and should help the listener understand their behavior (Bruce, 1978; Crnkovich, 2023; Ingov, 2024; Kafalenos, 2010; Herman, 2009; Valois, 1993; 2025).

Protagonist - The protagonist is the main character of a story. Also known as the hero of the story, or the lead character. The protagonist must have clearly defined inward and outward goals. This is the character that listeners need to care about, empathize with, and understand. A strong protagonist should have some larger-than-life characteristics [relative to the setting and context of the story]. Authentically, this character should be more attractive, clever, cunning, and intelligent than an average person, however not so much more that the listener begins to feel that this character is too perfect (Bromley, 2022; Callaghan, 2024; Ingov, 2024; Herman, 2009; Jenkins, 2023; Valois, 1993; 2025). To offset above-average qualities, the protagonist should have flaws—but not to the point that the character becomes unlikable. Having too much confidence, too much anxiety or too much trust are typical for a good protagonist (Callaghan, 2024; Herman, 2009).

Antagonist - As with the protagonist, the antagonist should be interesting. One of the best agents to move a strong protagonist toward growth and change is a powerful antagonist. This character is also known as the

villain of the story or the lead character's opposition. An antagonist must also have clearly defined inward and outward goals, and these goals must be in opposition to the goals of the protagonist. The antagonist is driven to do anything to stop the fulfillment of the protagonist's desires. This opposition creates an energy that drives a story forward. The antagonist might be the agent of evil in the story but, should not be totally evil. If the listener has some sympathy for the antagonist, the story will be more authentic. In the end, the antagonist should get what's coming to him/her, or the listener will be left dissatisfied. The purpose of telling a story is to instruct and to some extent, entertain (Bromley, 2022; Drew, 2023; Ingov, 2024; Houghton, 2021; Jenkins, 2023; Valois, 1993; 2025). In turn, when it comes to conflict, every single word, body language position, facial and voice expression has to play into conflict if possible. The emphasis on making the conflict exciting, surprising and mysterious is extremely important for the impact and learning aspects of the story (Crnkovich, 2023; Kafalenos, 2010; Herman, 2009; Valois, 1993; 2025).

Arch – For a story to feel satisfying to the audience, characters should change, and situations should change from beginning to end. This is referred to in storytelling as “*the arch*” of the story. If the protagonist starts out worried and concerned, then she/he needs to end up happy or satisfied and vice versa. Nothing tells a story more clearly than change and change over time (Callaghan, 2024; Drew, 2023; Ingov, 2024; Kafalenos, 2010; Crnkovich, 2023; Valois, 1993; 2025).

Resolution – The process of a story leads to the resolution, or climax—that pivotal point in a narrative that tells the audience who finally wins the conflict. The resolution needs to be resolved by the end of the story in a manner that makes sense and will be satisfying to the listeners. This is what the storyteller skillfully, carefully and dramatically builds up to, and now the storyteller can finally make the big

reveal. A good story sticks with the reader long after the last word (Ingov, 2004; Valois, 1993; 2025). Stories vary significantly from genre to genre, but good stories all share common essential elements briefly described above (Ingov, 2024; Jenkins, 2023; Kafalenos, 2010; Crnkovich, 2023; Houghton, 2021; Herman, 2009; Truby, 2008).

It should be noted here, that the motivation for, and satisfaction from, composing this manuscript springs from a 41 year career [first author] in research, teaching and public service in various states, at various institutions, for various audiences and in a variety of settings. On too many occasions to count, in social settings and with family and/or friends, a former student or a group of students would appear, and a lively conversation would ensue. Usually toward the close of these conversations, someone would ask, “What do you remember about the class you had with Dr. V?” Consistently, and over many years, the response was, “I can't remember much about the course content, but I remember the stories you told in class” [to emphasize the point you were trying to make during the lecture or discussion]. In turn, this evidence is anecdotal, however it is supported by the neuroscience, psychology and educational psychology literature (Valois, 2025) that documents the use of narratives and storytelling for effective teaching in the higher levels of the Bloom et al., (1956) Cognitive Taxonomy and Krathwohl's (1964) Affective Taxonomy of Educational Objectives. There is an intimate relationship between learning in the affective domain and learning in the cognitive domain and vice versa (Valois et al., 1989). Storytelling is foundational to the art, science and process of effective teaching, and especially for instruction in the practical application of Health Education, and Health Promotion and Health Behavior teaching, research and service (Abrahamson, 1998; 2006; Valois, 1993; 2025).

The Story: An Adolescent Health Risk Data Collection Conundrum

Macro Setting - This story takes place in Columbia, the state capital of South Carolina in 2006. Columbia is considered a mid-sized city with a population of approximately 117,088 when this story transpired. Ethnicity for Columbia in 2006 was determined to be: 47.9% Caucasian; 40.2% African American; 5.2% Hispanic or Latinx (of any race); 4.0% Other/Two or More Races; 2.3% Asian; 0.3% Native Hawaiian and Other Pacific Islanders; and 0.2% American Indian and Alaska Native (Neilsberg Research, 2024). South Carolina and Columbia in particular, have rich American Revolutionary and Civil War histories. Columbia has a diversified economy, with the major employers in the area being the South Carolina state government, the Prisma Health Hospital System, Blue Cross Blue Shield of South Carolina, Palmetto GBA, the University of South Carolina and Fort Jackson, the U.S. Army's largest and most active initial entry (basic) training installation.

Micro Setting - The specific settings for this health promotion/education/behavior research story involves the University of South Carolina's Arnold School of Public Health and an African American Church. The University was established in 1801, with the main campus exuding an antebellum feel with numerous old buildings landscaped with tall pine, water oak and magnolia trees. Campus is a "stone's throw" from State Capitol Buildings and a short drive to most government agencies and community-based organizations. The African American Church was founded in the early 1900s and was of medium size vis-à-vis its congregation and located in the heart of Columbia and the African American community.

Context - The context for this story is embedded in a project entitled: "*A Multilevel HIV Prevention Strategy for High-Risk Youth*," [aka Project iMPPACS] funded by the National Institutes of Health, National Institute of Mental Health, Division of Mental Disorders, Behavioral Research & AIDS.

Project iMPPACS [an acronym developed for "*in Macon, Providence, Philadelphia, Atlanta, Columbia, and Syracuse*"] was a multisite and multilevel primary prevention project involving researchers and practitioners with a wide range of expertise in adolescent health promotion and the development and production of mass media materials for African American positive youth development (Motivational MEE, 2009) to prevent sexually transmitted infections [STIs] and HIV. Principal Investigators [PIs] were from: Brown, Emory, Penn, Syracuse and the University of South Carolina. Romer and colleagues (2009) describe an intervention approach using culturally sensitive mass media messages [TV and Radio] to enhance protective beliefs and behavior of African American adolescents at risk for HIV. This approach exploits the potential that mass media messages have, not only to reach a large segment of the adolescent population and thereby support normative change, but also to engage the most vulnerable segments of this audience to reduce HIV-associated risk behaviors. The results from this HIV-prevention trial implemented in 2 medium-sized cities [with two control cities] in the United States illustrate the effectiveness of this intervention approach (Romer et al, 2009 and Hennessey et al., 2013 explain the theory base; cultural media messaging; research and intervention methods; study results and conclusion in extended detail). This story is anchored to 2006 baseline data collection procedures in the Columbia South Carolina Project iMPPACS site. Briefly, data collection involved completion of an extensive psychometric psycho-social and self-report knowledge, attitude, perception, intention and behavioral questionnaire, with a number of subscales (Vanable et al., 2009) via an audio computer-assisted self-interview [ACASI] (Romer et al., 1997) after assent by each youth and informed consent by his or her parents or guardians. Study participants could read each question on the laptop computer screen and simultaneously hear each question via

headphones. This questionnaire took the average 14–17-year-old study participant approximately 45 minutes to complete. In addition, participants [$n=1,139$ from four intervention sites; $n=416$ for the Columbia site] provided urine specimens to assess the presence of 3 prevalent STIs among adolescents: gonorrhea, chlamydia, and trichomoniasis. Urine sample collection occurred in a private rest room. Youth who tested positive for any STI were treated and counseled by a medical care provider at no cost. Partner referrals for treatment were also provided by a medical provider to reduce repeat STI transmission among sexual partners. Each study participant received a monetary incentive of \$30 for completing the baseline data collection procedures and a graduated monetary incentive for subsequent data collection follow-up at 3, 6, 12, 18, and 36 months after the HIV prevention intervention (Romer et al, 2009; Hennessey et al., 2013). Retention rates for the follow-up assessments remained over 90% throughout the course of the intervention; 97% at 3 months, 95% at 6 months, 91% at 12 months, and 92% at 18 months and 91% at 36 months.

Characters – The major characters in this story are the Project iMPPACS Columbia site Principal Investigator [PI] and the Church Youth Director [CYD] at the African American Church [Anonymous]. Additional characters include: AW, Project Director [PD], Graduate Research Assistants SK and JK [GRAs], and DM, Project Recruiter/Tracker [PRT].

Protagonist - The PI [RFV] has been described as gregarious, loquacious and a person who has literally, “*never met a stranger.*” RFV was raised on the southside of Elmira, a blue collar, gray steel town in Upstate New York, in a family of eight (2 older sisters; 2 younger sisters; 1 younger brother). His father was a vocational analyst/vocational instructor for the New York State Department of Corrections, a small business owner (residential sheet metal), a baseball and basketball coach and a WWII

combat infantry veteran. His mother was a registered nurse at St. Joseph’s, a teaching hospital in Elmira and previously, a WWII Army Air Corp Nurse in a convalescent hospital. RFV survived 12 years of Catholic school, football, basketball & baseball and a plethora of dogmatic nuns. RFV was drafted and served in the Army for two years during the Viet Nam Era. Through numerous and varied part-time jobs, the GI Bill, Graduate Assistantships, a Postdoctoral Fellowship and a US Public Health Traineeship, the PI funded all of his schooling [beginning with private Catholic high school and ending with a postdoctoral fellowship]. PI is an award-winning instructor, research scholar and public servant with a high level of social and emotional intelligence. At the time of this story, RFV was 54 years old, a tenured [full] Professor of Public Health and married with a teenaged daughter.

Antagonist – The female Church Youth Director [CYD] was a middle-aged African American woman who had been a member of the church for over 25 years at the time of Project iMPPACS implementation and would later be appointed as an Assistant Pastor of the church after the intervention concluded. She had experience working with various non-profit organizations, youth serving organizations and teen pregnancy prevention programs.

Other Important Characters – Project PD, AW is a street-smart, Navy veteran from Hartford Connecticut with a B.S. in Media Arts and an M.P.H. in Health Promotion & Education from USC in 2006. AW had 10 years of experience in Substance Abuse Prevention & Treatment and a side-hustle selling records and tapes for a local music store. Described as a situational “*alpha male*” AW was well-organized, socially skilled and connected to the African American community in Columbia. PD was pursuing a Ph.D. in Health Administration during the project. GA SK, a South Carolina native, was a Clemson

Graduate with a B.S. in Health Science working on her M.P.H. in Health Promotion in 2006 and subsequently her Ph.D. SK is comfortable in town & country, friendly and outgoing and skilled in follow-up data collection with keen instincts for who should contact whom on what days and times. SK created a clever MySpace account for tracking study participants without cell phones and challenged with inconsistent online connections. GA JK is a product of Atlanta and a Biology graduate of Ft. Valley State University in Georgia. Soft spoken and cerebral, JK was responsible for, and effective with, project data collection, reduction and management. JK worked seamlessly with team members in tracking, prepping for data collection and subsequent shipment to Penn. JK was pursuing his M.S.P.H. in Health Promotion in 2006 and subsequently a Ph.D. Recruiter Tracker DM was an undergraduate at USC and received her M.S.W. from the College of Social Work. DM was a seasoned veteran Social Worker in 2006 and school-based in the largest school district in Columbia. She is friendly, outgoing, comforting, social/emotionally intelligent and well-connected to the African American community in Columbia. Her recruiting skills were valuable to the success of Project iMPPACS. DM also worked seamlessly with the project medical doctor for scheduling and treatment/counseling of study participants testing positive for an STI.

The Conflict

The turmoil transpired during data collection procedures in the Fall of 2006 at a medium-sized African American church in Columbia, South Carolina. Data collection [described earlier] involved setting up 25-30 laptop computers on tables with chairs, comfortably spaced for study participant privacy. The psycho-social and behavioral health questionnaire took approximately 45 minutes for the average adolescent to complete via the ACASI [audio & visual] format. The

use of the ACASI [Audio-Computer Assisted Self- Interview] format was effective for all study participants, especially those with undiagnosed or undisclosed written word or voice processing challenges. ACASI leveled the processing field and contributed to quality data collection with little to no or unusable data. The urine sample was conducted in a private room [church restrooms] for female and male adolescents respectively. The Columbia iMPPACS data collection team [AW, DM, JK & SK] successfully collected project data [questionnaire, urine and payment of monetary incentive] without incident on this evening, with one exception.

The following day PD AW called for an unscheduled team meeting. The PI was concerned but not overtly anxious. At this meeting, AW informed the PI that the Church Youth Director, had taken 10 of the 30 dollars from each study participant [i.e., the ten-dollar bill] who submitted questionnaire data and urine sample on this evening and were compensated with their 30-dollar monetary incentive! PI was initially surprised, concerned, incredulous and immediately inquired as to why this taking of money from the adolescents transpired. The PD informed the PI that the CYD stated "*I'm teaching these young people how to tithe.*" The PI was perplexed and requested a play-by-play description of exactly how this taking of money transpired at the adolescent to CYD level. The PI asked each team member what they witnessed, and their verbal accounts were consistent.

It should be noted here, that "*tithing*" or "*tithe*" is derived from the Old English word "*teogotha*," which means "*tenth*." In biblical terms, tithing refers to the practice of giving a tenth, or 10%, of one's income or resources to support the work of the church or the religious community. Tithing has a rich history in the Bible and is found throughout the Old and New Testaments. Tithing is a practice that has deep roots in religious traditions, specifically in Christianity. This practice holds significant

spiritual and practical implications for believers (Christianity.com, 2024).

The PI was seriously concerned knowing that the monetary incentive monies were federal dollars that flowed through a state university account. Did the adolescents agree to give the 10 dollars to the CYD or did she, with her presence and personality “*strong arm*” these young people out of their money in the spirit of “*tithing?*” In addition, if “*tithing*” is anchored to 10% of their most current earnings, then the CYD just took 33.3% of their 30-dollar monetary incentive for data submission. What kind of message does that send to the youth, the pastor, the congregation and the African American community? It was later determined that four [4] of the study participants in this particular cohort did not attend this particular African American church, however, they did not resist surrendering their 10-dollar bill [again, 33.3% of their monetary incentive] to the CYD.

It should be mentioned here that this narrative is shared via the perspective of the PI with clarification input from each member of the Columbia Project iMPPACS team. Field notes assisted in the clarification and consensus process. An old axiom notes that there are often three sides or perspectives to every story, in this case, the PI, the CYD and the absolute truth. However, the corollary to the axiom of this tithing story involves four eyewitnesses [iMPPACS team members] and twenty-seven study participants who surrendered their 10-dollar bills to the CYD.

Initial Reactions by the Principal Investigator

As the PI processed the reality of this situation, the following concerns and questions were generated owing to the gravity of the NIH funded data collection situation:

1). What actually happened with the money? Did the CYD give it to the church pastor or business manager? Did the pastor know about this situation, and did she/he approve? Did the

CYD keep the money for herself? Or did she split it with the pastor? Both are highly improbable, however both possible.

2). Could the PI be in legal trouble as he is/was responsible for all aspects of Project iMPPACS at the Columbia site? Should he share this situation with his Dean and Department Chair? Should Dean and Department Chair share this with the Provost and the President? Should the Columbia Police Department be notified or even the USC Campus Police?

The PI’s mind was racing with the possibilities of this immediate [financial/data collection] situation, all of them concerning, and none of them in the moment, positive. Having learned a multitude of lessons from his 54 years of life, the PI exercised one age-old rule of life. “*If nothing is burning and no one is bleeding, then nothing has to be done immediately or in the moment.*” The PI’s self-talk focused on don’t make “*knee jerk*” decisions from “*knee jerk*” reactions. Sleep on it, give it some thought and remember, “*what a difference a day makes*” vis-à-vis a person’s thoughts, concerns, feelings, emotions and most of all, the facts. Get opinions and reactions from family, friends and colleagues with similar or greater years of experience and wisdom. There is an old axiom in higher education and research that states, “*a fool goes to one source, and a scholar goes to many.*” In other words, slow it down, and think this situation through from every possible perspective using consensus from the collective wisdom via experienced people that you trust.

Second Meeting with Columbia iMPPACS Team

After considerable calm and comprehensive thought, the PI called for a second meeting with the team. His questions were focused on the behavior of the projects’ adolescent study participants and the CYD.

- 1). Did any of the study participants overtly display any anger or resentment to the CYD after she took their ten-dollar bill?
- 2). Did the CYD show any aggression or display any displeasure during the process of taking the ten-dollar bill from any of the study participants?
- 3). Did any iMPPACS team member receive any negative feedback from any study participant from this particular African American church vis-à-vis the behavior of the CYD?
- 4). Did any team member receive any negative feedback from any parent or guardian of a study participant from this particular African American church vis-à-vis the behavior of the CYD?
- 5). Did any team member receive any negative feedback from any member of this church congregation or community from what transpired at this particular African American church vis-à-vis the behavior of the CYD and the taking of 33.3% of the study participants' monetary incentive?
- 6). Has any team member communicated with the CYD or the pastor of the African American church since the data collection incident?

The PI was obviously probing for any potential controversy or falling out from what had transpired vis-à-vis the “*tithing event*” at the church, small, medium or large in scope or sequence. After receiving a “*no*” response to the queries above and receiving no phone calls, email messages or requests for a meeting, the PI decided to wait a little bit longer, thinking that a potential problem might take more time to percolate and present itself.

Third Meeting with Columbia iMPPACS Team

After a fortnight in time, the PI called for a third team meeting. In consideration of what

had been gleaned in regard to study participant lack of reaction to the loss of ten dollars of incentive money, no reports of aggression or overt displeasure and no contact with any of the involved parties, the PI framed and subsequently asked the following questions.

- 1). How many study participants were in this particular cohort [cohorts ranged from 25-30]?
- 2). For the handful of study participants from this cohort [and previous cohorts], who did not show up for data collection [n=3] at the scheduled time and place, how and when did you all [iMPPACS team] follow-up and subsequently secure psycho-social-behavioral data and urine samples to complete data collection for this and other cohorts?

The PI was over the initial shock of the “*tithing*” incident at this time in the resolution process. His focus was now on what have we learned via this African American church data collection incident, and where we are going with data collection procedures from this point forward. After receiving clear, cogent and favorable responses from team members the PI had come to a conclusion and made a command decision.

The Arch

As noted previously, for a narrative to feel satisfying to the listening audience, characters should change, and situations should change from beginning to end. Again, this dynamic is referred to in storytelling as “*the arch*” of the story. Team members explained in detail to the PI that absent study participant cohort members were contacted by one of the team members via multiple communication channels to schedule a time and place for their questionnaire data and urine sample submission. What evolved in this process was the study participant(s) willingness to come to the Arnold School of Public Health, Department of Health Promotion, Education & Behavior for this data collection procedure. As

you will read in the resolution section of this story, the PI was moved from the omega to the alpha, from the darkness to the light, and from what first appeared as a trip down the road to public health/NIH perdition, ended up on the pinnacle of Project iMPPACS data collection progress and prosperity.

Resolution

To be through, the PI held a brief meeting with the University of South Carolina's Institutional Review Board for the Rights of Human Participants in Research [IRB] and university legal experts. In turn, it was confirmed by the IRB and legal folks that once a study participant completed their data submission [questionnaire and urine sample], endorsed two receipt forms and secured their 30-dollar monetary incentive for baseline data submission, the University of South Carolina obligation and contractual agreement was completed. Informed consent by the study participant and assent via parent/guardian added legal strength to this conclusion. What happened to the 30-dollars or any part of this monetary incentive "*ex post facto*" was not the responsibility of the Columbia Project iMPPACS team, any division of the University of South Carolina, nor the National Institutes of Health.

Moreover, the research team learned that study participants desired and enjoyed coming onto campus, submitting their data in a smaller and quieter environment and subsequently dining and shopping at the University Student Union/Russell House [across the street from the Arnold School of Public Health] with the money they just earned. As a result of this conflict and the research teams' response to this challenge, room space was created for tables and chairs, laptop computers and headphones, permanently prepared for completion of the psycho-social and behavioral health questionnaire and for the submission of urine samples. In turn, all data collection procedures were subsequently conducted in the project offices for all the

cohorts and all 416 study participants at each follow-up point in the project. A team member of the same gender was present for each study participant individual follow-up. Round-trip bus fare was provided for each study participant. In addition, the probability of a CYD absconding with any percentage of a study participant's monetary incentive upon receipt, was now eliminated.

In addition, this transition to having the study participants come to campus, eliminated schlepping 30 laptop computers, extension cords, chairs and small tables and heavy rugs [to prevent tripping on extension cords] to data collection sites spread around the Columbia community. This epiphany of modifying project data collection procedures pleased the team members, currently working on advanced degrees in public health and the recruiter tracker a full-time [DM, school-based social worker] employee. Time management for academics, personal time and Project iMPPACS responsibilities were all enhanced by changes to data collection procedures. Not traveling to churches and community-based organizations [Boys & Girls Clubs of Columbia, churches and various CBOs etc.] also eliminated the PI worry and anxiety via the PD carrying 900 dollars in cash out into the community where our data collection and monetary incentive procedures were known to the public. In essence, this change in data collection procedures saved time, energy, anxiety and risk while creating efficiency and an economy of scale for the project.

Moreover, this modification in data collection modius operandi, eliminated a future return to this African American church and any other community-based organization that could have our study participants dealing with CYDs promoting "*tithing*" and the loss of monetary incentive monies or other unpredictable challenges to our study participants and data collection procedures.

This revised process also eliminated having to meet with the CYD, the pastor, the PI's Dean and Department Chair, Provost and President. The PI did not have to concern the Lead PI [at

Penn] or the Project iMPPACS NIH Project Officer. Meeting with the CYD and the pastor could have sent mixed messages, led to misunderstandings, uncontrolled emotions and resulted in a community relations disaster. Academic administrators are busy people and admire faculty and staff who are skilled enough to solve their own problems.

This “*tithing*” story/narrative calls to mind Zimmerli’s Administrative Principles (1978). As for administrative decision making and management principles/techniques, Zimmerli (1978) describes sixteen general considerations for effective administrative leadership and management. Number fourteen appropriately applies to this “*tithing*” story. *“In order to most efficiently solve problems, the administrator [USC Administrators] should, as a general rule, allow the person closest to the problem [PI & Research Team] to make the decision. However, it may sometimes be necessary to involve others. This applies to teachers/researchers as individuals, as teams, as a department etc. The further the decision is from those immediately involved, the greater the likelihood that the decision will not be appropriate.”* The PI having studied these principles as a student, and via experience, instinct and wisdom, was wise to make his decisions in consultation with the Project iMPPACS team. As noted in this administrative principle/technique, the PI and his team were “*closest to the problem*” and subsequent decision (Zimmerli, 1978, p. 231).

In essence, with sound thinking and decision making, the PI decided to do “*nothing*” that could negatively influence a relationship with the African American Church and the African American Community in Columbia. Cooler heads and the “*greater angels of the PIs nature*” and experience prevailed in this situation.

When dealing with human beings, the “*unholy trinity of power, money and sex*” is always a possible source of conflict and potentially the escalation of problems (Valois, 2025). This story had all three, however, not

on the scale as state, national or international politics. Power and money were evidenced by the PIs and the universities in securing approximately 3 million dollars [per site] from the National Institutes of Health to promote adolescent health for six years via the creative use of culturally competent TV and radio messaging. Power and money were also evidenced by the CYD’s personality and authority in taking ten dollars from 27 African American adolescents under the teachable moment of “*tithing*.” Power and money are associated with what the Columbia iMPPACS team represents in promoting safer sexual behaviors and providing monetary incentives to remain enrolled in the study and the money saved in preventing adolescent STIs/HIV. The entire Project iMPPACS efforts [all four intervention sites and the coordinating center at Penn] dealt with the reality of sex and adolescent sexual risk behaviors. The health care costs of common STIs and HIV in a community are significant in addition to the costs of unwanted pregnancies. The money aspects of these dynamics are both short-term and long-lasting for adolescents who might be challenged in problem solving, impulse control and decision-making. In summary, the “*unholy trinity of power, money and sex*” is a reality of daily life and was omnipresent in Project iMPPACS and the teachable moments of this story. In turn, it should be noted here that via consensus, the Columbia Project iMPPACS team truly believed that the CYD considered this situation as a valuable “*lesson in tithing*,” similar to a parent teaching an adolescent how to save allowance money for the future. In addition, our team believed that for all intents and purposes, the CYD took the money and either gave it to the pastor or to the business manager of the church.

Implications for Health Behavior Research

The lessons gleaned from this “*data collection conundrum story*” would suggest that working in public health, especially in the social and behavioral sciences applied to

Health Promotion, Health Education and Health Behavior is far beyond textbook and lecture note teaching. The lessons learned from this experience have implications for teaching, research and public service. Researchers should learn to expect the unexpected and to plan accordingly. In turn, when a unique situation presents itself, covered with conflict and community relations red flags, to proceed with caution dealing with facts while considering and controlling emotions would be in order. How many times has a story from the field ended with the words, “you couldn’t make this stuff up,” or “this is not the stuff they teach us in PhD school.” However, stories similar to this one, involving lessons learned from field work in public health promotion and health behavior research could, and should be learned in both graduate and undergraduate training programs. The literature notes the learning advantages to well-constructed and well-communicated narratives (Abrahamson, 1998; 2006; Willingham, 2009; Valois, 2025).

As noted earlier, stories/narratives enhance the learning process by enhancing learner interest, interaction and making content personally relevant (Valois, 1993). Owing to the universal dynamics of storytelling (Willingham, 2009), comprehension of material presented in a narrative structure is easier, due to the learners internalized understanding of how stories are told. Moreover, by composing the narrative to make the story interesting, topics and highlights become easier to remember.

From this “*data collection conundrum*” story, consider the value of knowing the culture and language of “*church*” and in this case, the African American church as a context for this research situation. It was advantageous that each team member was familiar with the concept of “*tithing*” and not totally shocked or bewildered when it was presented by the CYD via the taking of 10 dollars from each study participant. It was also advantageous in that three of the four data collection team members were African American, and two members

were female. In addition, all team members had previous experience with community-based health promotion/primary prevention program intervention and evaluation.

The required informed consent and parental/guardian assent took on greater importance as well as the legal aspects of the contractual “*quid pro quo*.” In essence, “*you provide us with the questionnaire data and a urine sample, and we incentivize you with 30 dollars in cash, all documented in writing, verified by the university and endorsed by the study participant, their parent and guardian and by a research team member.*” The value here in common speak or street language was the ability to “*cover your backside*” or in military speak, “*to protect your 6.*”

The protagonist of the story [PI] depicts a number of lessons learned, beginning with hiring and empowering a diverse and talented team of aspiring public health professionals. The team was cool under pressure, acknowledging and carefully observing the behavior of the CYD and noting that none of the 27 study participants present at the church complained or “*pitched a fit.*” The team allowed the conflict to play out and not escalate any existing tension. It should be noted here that the PIs leadership style was to “*hire the best people possible*” empower them to make good decisions in their positions and empower them to learn each other’s job responsibilities in case a team member was sick or challenged for a period of time. This enhanced what team members could share in future job interviews, and it also enhanced research team “*esprit de corps.*”

The PI was alarmed at first learning of the “*tithing*” dynamic and he mentally envisioned worst-case scenarios. Not an uncommon human reaction. The lesson here was that time in thought and investigative conversation contributed to a clear, calm and clever “*silver lining*” to this initial dilemma. Community relations with the African American church were not strained or challenged and the project developed an “*economy of scale*” for effective tracking of study participants via data

collection at a centralized location in the school of public health.

The Columbia Project iMPPACS team solved the problem at the local level. Administrators from various levels and offices at the university were not involved, saving time, money and work-related energy. This presented a good lesson in handling problems and decision making at the micro level and the macro level for current researchers, teachers and public servants and those aspiring to join the ranks of university faculty or a research think tank.

The data collection dilemma described and discussed in this narrative, also depicts the value of dealing with human beings, known and unknown with respect, dignity and by giving the benefit of the doubt. The PI could have caused major damage by approaching the CYD or the pastor. In turn, he recognized the power and authority of the CYD and the pastor and respected the relationship established, and the need to be sustained, with the African American church and the African American community. The PI respected and trusted the data collection team and the veracity of their explanation of the scope and sequence of the CYD and the tithing situation. Moreover, the PI trusted and respected the Project iMPPACS NIH protocol and the safeguards for conducting research in a community-based setting.

Implications for Instruction in Health Behavior Research

The unique dynamics of this “*tithing*” story and the lessons learned have implications for instructors responsible for teaching research methods, program evaluation or community-based participatory research methods. For large group discussion, an instructor could, with animation and good affect, read aloud this “*Data Collection Conundrum*” story beginning with the Setting then proceeding to the Context, Characters [Protagonist; Antagonist; other characters] and the Conflict. Stopping at the Conflict, the instructor could

then say to the class, 1) “You are the PI responsible for everything that transpires in this NIH funded project, what would you do?” 2) How would you handle this situation in an immediate and long-term time-frame? Allow ample time for discussion and subsequently sharing the Arch and the Resolution to the story.

For a small group approach, an instructor could reprint the story on paper beginning with Setting and ending with the Conflict and handout to each member in each small group. Give a reasonable amount of time for an initial read and a second read for comprehension and clarity.

Similar to the large discussion approach, present the query: 1) “You are the project PI responsible for everything that transpires in this NIH funded project, what would you do?” 2) How would you handle this situation immediately and over time? Appoint a group leader and note-taker and have each group present their strategy for how they would handle this data collection situation. Allow ample time for discussion and for instructor clarification. Be sure to share the Arch and the Resolution of the story sharing what the PI and his team did to solve the “*tithing*” problem. Be sure in either approach to end the lesson with the reminder of finding the “*silver lining*” solution, the economy of scale created and the reduction of risk via having the study participants come to the project site to submit their psychosocial and biological data. Respect for culture and community climate were also imperative in this story as well as treating all parties with dignity.

Limitations to Storytelling

There is no perfect teaching technique, and no pedagogical methodology is a panacea for effective teaching. There are risks involved in the use of narratives/storytelling in a college classroom, small group teaching and one-on-one thesis/dissertation direction. Abrahamson (2006), Foy (2015) and Green (2004) depict some classic risks associated with storytelling

at the college/university level of individual and group instruction. In the case where an instructor utilizes stories too often, students may begin to perceive that Health Promotion, Education and Behavior could be based more on the use of narratives and not grounded in educational psychology, social and behavioral science theory, and empirical research. In consideration of the overall structure of a course and the personality of the instructor, storytelling could be considered “*only as entertainment*” and/or a “*break from course content.*” An additional concern involves students becoming overly intrigued or distracted with certain topics within health promotion, education and behavior. This could be owing to the fact that a good story may miss out on larger instructional themes. With knowledge of these potential pedagogical pitfalls, an instructor should take care in assisting students in avoiding these misdirects so that the beneficial effects of storytelling can be maximized and that the ultimate goals of the course content can be realized (Foy, 2015).

Conclusion

It appears reasonable to conclude here that the use of storytelling is an age-old teaching technique that has value and effectiveness. Storytelling for educational purposes is processed differently by the human brain vis-à-vis lecture notes, PowerPoint bullets, charts and graphs. Storytelling can stimulate emotions, create cognitive suspense, and immerse the learner “*into the story*” if narrated effectively. Research suggests that lessons learned, values clarified and morals from a story, are remembered and utilized long after textbooks and class notes have been covered in dust. The value of storytelling for teaching and counseling has also been documented from a neuroscience perspective.

Ultimately, instructors are encouraged to intermittently incorporate effective narratives as key point summaries between periods of heavy content material to disperse the monotony of standard lecture, sustain student

attention and potentially assist with student recall. It is probable that when instructors share a personal narrative in a teaching context, they bridge the gap between cryptic classroom theory and context dependent practical application, enhancing recall of important classroom content (Kromka et al., 2019). In addition, instructors can use narratives to assist students in connecting to lesson content on a deeper contour and apply the lessons to their personal and professional lives. Storytelling has been found to positively reflect on the reputation of a course and student evaluation of an instructor (Kromka et al., 2019)

The ultimate advantage of storytelling is the unique status that stories have regarding their memorability, understood through their narrative structure and the emotional investment they evoke from their audience. Storytelling is a method of creating mutual understanding between two individuals (Abrahamson, 2006; Landrum et al., 2019) or to a class of students (Valois, 1989). Instructors tell stories in health promotion, education and behavior because they are engaging, creative and lead to insights that inform and inspire future researchers, teachers and public servants. Storytelling, when used judiciously, properly and effectively, is a powerful pedagogical methodology. Instructors should be encouraged to leverage the multiple uses of storytelling in their teaching. Moreover, teachers, researchers and public servants in public health promotion and education and various health professions, are encouraged to share the stories of their experiences to harness this pedagogical power to collectively support and encourage learning inside and outside of the classroom. In turn, storytelling is an effective component of the learning process with documented effectiveness (Kroma & Goodboy, 2019; Keehn, 2015; Sheaffer, 2017; Wanzer et al., 2010) with implications for Health Education, Health Promotion and Health Behavior.

All aspects of learning create experiences, whether the content is subjective or empirical

in nature. In turn, the use of storytelling has the potential to be an effective instructional methodology in all areas of higher education, especially public health education, health promotion and health behavior. Storytelling develops a context for active learning and remarkable “ownership of the learning” (Abrahamson, 1998; Valois, 1989). Storytelling and narrative can be evidenced within many areas within higher education, in both theoretical and applied disciplines (Wills, 1992). Storytelling can incontestably be considered as the bedrock of the learning process and the foundation of teaching as a profession and as a process (Valois, 2025).

Acknowledgements

The study referenced in this article was conducted through the iMPPACS network supported by the National Institutes of Mental Health (Pim Brouwers, Project Officer) at the following sites and with local contributors: Columbia, SC (MH66802; Robert F. Valois [Principal Investigator; PI], Naomi Farber, Andre Walker); Macon, GA (MH66807; Ralph J. DiClemente [PI], Gina Wingood, Laura F. Salazar, Rachel Joseph, Delia Lang); Philadelphia PA (MH66809; Daniel Romer [PI], Michael Hennessy, Sharon Sznitman, Bonita Stanton, Susan Lee, Eian More, Ivan Juzang, & Thierry Fortune); Providence, RI (MH66785; Larry K. Brown [PI], Christie Rizzo, Nanetta Payne); and Syracuse, NY (MH66794; Peter A. Venable [PI], Michael P. Carey, Rebecca Bostwick). The RCT registration number was NCT00353405. Note. The content of this article is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Mental Health.

Human Participant Protection

All research protocols were approved by the institutional review boards of the participating educational institutions [University of South Carolina; Emory University; University of

Pennsylvania; Brown University; & Syracuse University] at each data collection site [Columbia, SC; Macon, GA; Providence, RI; & Syracuse, NY].

Conflict of Interest

The authors have no conflict of interest to report.

Discussion Questions

1). The literature suggests that storytelling is a powerful and proven health behavior instructional methodology.

a) From a neuroscience perspective, explain why health behavior instructors should judiciously incorporate storytelling into their teaching.

b). From a psychology/educational psychology perspective, explain why health behavior instructors should judiciously incorporate storytelling into their teaching.

2). As effective as storytelling can be, it needs a structure to be effective while complementing health behavior course content. Identify and briefly describe six essential elements of a story.

3). Storytelling as an instructional methodology in health behavior can have limitations. Identify and describe two limitations to storytelling as an instructional technique.

4). From the “tithing” story anchored to an African American Church and data collection via an NIH funded project, is there anything you would have done differently, done in addition to what the PI did in this story the PI or not done at all? Identify and explain.

References

- AbdulSabur, N. Y., Xu, Y., Liu, S., Chow, H. M., Baxter, M., Carson, J., & Braun, A. R. (2014). Neural correlates and network connectivity underlying narrative production and comprehension: A combined fMRI and PET study. *Cortex: A Journal Devoted to the Study of the Nervous System and Behavior*, 57, 107–127. <http://dx.doi.org/10.1016/j.cortex.2014.01.017>
- Abrahamson, C. E. (2006). Motivating students through personal connections: Storytelling as pedagogy in introductory psychology. In D. S. Dunn & S. L. Chew (Eds.), *Best practices for teaching introduction to psychology* (pp. 245–258). Mahwah, NJ: Erlbaum. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781410613431-28/motivating-students-personal-connections-storytelling-pedagogy-introductory-psychology>
- Abrahamson, C. E. (1998). Storytelling as a pedagogical tool in higher education. *Education*, 118(3), 440-451. <https://link.gale.com/apps/doc/A20494609/AONE?u=anon~cce19112&sid=bookmark-AONE&xid=f86e27fb>
- Alterio, M., & McDrury, J. (2003). Learning through storytelling in higher education. London, UK: Dunmore Press. <https://www.taylorfrancis.com/books/mono/10.4324/9780203416655/learning-storytelling-higher-education-maxine-alterio-janice-mcdrury>
- Andrews, D. H., Hull, T. D., & Donahue, J. A. (2009). Storytelling as an instructional method: Definitions and research questions. *Interdisciplinary Journal of Problem-Based Learning*, 3, 6–23. [doi:10.7771/1541-5015.1063](https://doi.org/10.7771/1541-5015.1063)
- Bakhtin, M. (1981). Discourse in the novel. In M. Holquist (Ed.), *The dialogic imagination: Four essays by M. M. Bakhtin*. Austin, TX: University of Texas Press. [The Dialogic Imagination \(utexas.edu\)](http://www.utexas.edu)
- Baldassano, C., Hasson, U., & Norman, K. A. (2018). Representation of real-world event schemas during narrative perception. *Journal of Neuroscience*, 38, 9689–9699. <http://dx.doi.org/10.1523/JNEUROSCI.0251-18.2018>
- Baerger, D. R., & McAdams, D. P. (1999). Life story coherence and its relation to psychological well-being. *Narrative Inquiry*, 9, 69–96. [doi:10.1075/ni.9.1.05bae](https://doi.org/10.1075/ni.9.1.05bae)
- Berns, G. S., Blaine, K., Prietula, M. J., & Pye, B. E. (2013). Short- and long-term effects of a novel on connectivity in the brain. *Brain Connectivity*, 3, 590–600. <http://dx.doi.org/10.1089/brain.2013.0166>
- Bloom, B.S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4-15. <https://doi.org/10.3102/0013189X013006004>
- Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals Handbooks I: Cognitive Domain*. New York: David McKay Company, Inc.
- Brady, M. K. (1997). Ethnic folklore. In T. A. Green (Ed.), *Folklore: An encyclopedia of beliefs, customs, tales, music, and art* (pp. 237–244). Santa Barbara, CA: ABC-CLIO.
- Bromley, T. (2022). Seven elements of a story: How to create an awesome narrative. Accessed November 15, 2024. <https://blog.reedsy.com/elements-of-a-story/>
- Brown, J. S., & Duguid, P. (1998). Organizing knowledge. *California Management Review*, 40(3), 90–111. <https://doi.org/10.2307/41165945>
- Bruce, B. (1978). What makes a good story? *Language Arts*, 55(4), 460-466. <https://www.jstor.org/stable/41404649>

- Bruner, J. S. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press. [https://doi.org/10.1016/0005-7967\(92\)90014-8](https://doi.org/10.1016/0005-7967(92)90014-8)
- Bruner, J. S. (2002). *Making stories: Law, literature, life*. New York, NY: Farrar, Straus and Giroux. <https://doi.org/10.5565/rev/athenead/v1n3.74>
- Callaghan, F. (2024, October 19). *What are the Elements of a Story? 12 Central Elements of Storytelling*. <https://www.scribophile.com/academy/the-elements-of-a-story>
- Chafe, W. (1990). Some things that narratives tell us about the mind. In B. K. Pellegrini & A. D. Britton (Eds.), *Narrative thought and narrative language* (pp. 79–98). Hillsdale, NY: Erlbaum. <https://doi.org/10.4324/9781315808215>
- Conroy, P. (2010). *My reading life*. Nan A. Talese/Doubleday Publishing.
- Copeland, D. E., Larson, K. G., & Palena, M. T. (2015). Remembering stories: Constructing elaborate situation models in memory. In K. Brakke & J. A. Houska (Eds.), *Telling stories: The art and science of storytelling as an instructional strategy* (pp. 40–48). Washington, DC: American Psychological Association. Retrieved from <http://teachpsych.org/ebooks/tellingstories.html>
- Crnkovich, E. (2024). The six basic elements of a great story. Accessed December 7, 2024. <https://salesreinvented.com/episode-301-edith-crnkovich/>
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Boston, MA: Harvard Business School Press. DOI: [10.1145/348772.348775](https://doi.org/10.1145/348772.348775)
- Davidhizar, R., & Lonser, G. (2003). Storytelling as a teaching technique. *Nurse Educator*, 28, 217–221. https://journals.lww.com/nurseeducatoronline/Abstract/2003/09000/Storytelling_as_a_Teaching_Technique.8.aspx
- Denning, S. (2009). *What is a story? What is a narrative? Definitions*. Retrieved from http://www.stevedenning.com/What_story.html Accessed August 13, 2024
- Downs, V. C., Javidi, M., & Nussbaum, J. F. (1988). An analysis of teachers' verbal communication within the college classroom: Use of humor, self-disclosure, and narratives. *Communication Education*, 37, 127–141. <https://doi.org/10.1080/03634528809378710>
- Drew, C. (2023, July 16). *The 8 elements of a story: Explained for students*. <https://helpfulprofessor.com/story-elements/>
- Duck, S. (1994). *Meaningful relationships: Talking, sense, and relating*. Thousand Oaks, CA: Sage. <https://www.jstor.org/stable/353936>
- Dyson, A. H., & Genishi, C. (1994). *The need for story: Cultural diversity in classroom and community*. Urbana, IL: National Council of Teachers of English.
- Farrell, A. D., Valois, R. F., & Meyer, A. L. (2002). Evaluation of the RIPP-6 Violence Prevention Program at a rural middle school. *American Journal of Health Education*, 33(3), 167-177. <https://doi.org/10.1080/19325037.2002.10604733>
- Farrell, A. D., Valois, R. F., & Meyer, A. L. (2003). Impact of the RIPP Violence Prevention Program on rural middle school students. *Journal of Primary Prevention*, 24(2), 143-167. <https://doi.org/10.1023/A:1025992328395>
- Fawcett, S. E., & Fawcett, A. M. (2011). The “living” case: Structuring storytelling to increase student interest, interaction, and learning. *Decision Sciences Journal of Innovative Education*, 9, 287–298. <http://dx.doi.org/10.1111/j.1540-4609.2011.00307.x>
- Finkel, D. L. (2000). *Teaching with your mouth shut*. Portsmouth, NH: Boynton/Cook. ISBN:9780867094695

- Fisher, W. R. (1984). Narration as a human communication paradigm: The case of public moral argument. *Communication Monographs*, 51, 1–22.
<https://doi.org/10.1080/03637758409390180>
- Flowers, B. S. (1988). *Joseph Campbell: The power of myth with Bill Moyers*. New York: Doubleday.
<https://cir.nii.ac.jp/crid/1130282270528836224>
- Foy, J. E. (2015). Encouraging comprehension: Insights from research on reading stories. In K. Brakke & J. A. Houska (Eds.). *Telling stories: The art and science of storytelling as an instructional strategy* (pp. 49–59). Washington, DC: American Psychological Association.
<http://teachpsych.org/ebooks/tellingstories.html>
- Frymier, A. B., & Shulman, G. M. (1995). “What’s in it for me?”: Increasing content relevance to enhance students’ motivation. *Communication Education*, 44, 40–50.
<https://doi.org/10.1080/03634529509378996>
- Gerrig, R. J. (1993). *Experiencing narrative worlds*. New Haven, CT: Yale University Press. [https://DOI:10.1016/S0378-2166\(99\)00017-X](https://DOI:10.1016/S0378-2166(99)00017-X)
- Green, M. C. (2004, April). Storytelling in teaching. *APS Observer*, 17. Retrieved from <https://www.psychologicalscience.org/observer/storytelling-inteaching>
- Green, M. C., & Brock, T. C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology*, 79, 701–721.
<http://dx.doi.org/10.1037/0022-3514.79.5.701>
- Hazel, P. (2008). Toward a narrative pedagogy for interactive learning environments. *Interactive Learning Environments*, 16, 199–213.
<http://dx.doi.org/10.1080/10494820802113947>
- Hennessy, M. K., Romer, D., Valois, R. F., Vanable, P. A., Carey, M. P., Stanton, B. A., Brown, L. K., DiClemente, R. J. & Salazar, L. (2013). Safer sex media messages and adolescent sexual behavior: 3-year follow-up results from Project iMPPACS. *American Journal of Public Health*, 103(1), 134-140.
<https://doi.org/10.2105/AJPH.2012.300856>
- Herman, D. (2009). *Basic elements of narrative*. John Wiley & Sons.
<https://journals-sagepub-com.ezproxy2.library.colostate.edu/doi/pdf/10.1177/14614456100120060604>
- Hokanson, B., & Fraher, R. (2008). Narrative structure, myth, and cognition for instructional design. *Educational Technology*, 48, 27–31.
<http://hokanson.design.umn.edu/publications/2007HokansonFraher%20NarrativeStructureEdTec48-1.pdf>
- Holladay, S. J. (1984). *The Functional Impact of Narrative Activity in Effective Teaching: A Thesis Submitted to the Faculty of Purdue University* (Master’s Thesis, Purdue University).
<https://docs.lib.purdue.edu/dissertations/>
- Ingov, P. (2024, February 11). *Elements of oral storytelling: Characteristics, elements, & traditions*.
<https://ingostudio.com/storytelling/oral-storytelling/>
- Jenkins, P. (2023). What makes a story a narrative: Understanding the key elements. Brilliantio. <https://brilliantio.com/what-makes-a-story-a-narrative/>
- Kafalenos, E. (2010). Essential elements of story-telling: An interdisciplinary perspective. *Papers on Language & Literature*, 46(3), 347-353.
<https://link.gale.com/apps/doc/A236485094/AONE?u=anon~1c080733&sid=googleScholar&xid=789a7bea>
- Keehn, M. G. (2015). “When you tell a personal story, I kind of perk up a little bit more”: An examination of student learning from listening to personal stories in two social diversity courses. *Equity &*

- Excellence in Education*, 48, 373–391.
<http://dx.doi.org/10.1080/10665684.2015.1056712>
- Kerr, J. C., Valois, R. F., Farber, N. B., Vanable, P. A., DiClemente, R. J., Salazar, L. F., Brown, L. K., Carey, M. P., Romer, D., Hennessy, M. F., Stanton, B. M., Jemmott, J. B. & Jemmott, L. S. (2013). Effects of Promoting Health among Teens on general health knowledge, dietary, physical activity, and substance use behaviors for African American adolescents. *American Journal of Health Education*, 44(4), 1-13.
doi: [10.1080/19325037.2013.798218](https://doi.org/10.1080/19325037.2013.798218)
- Kolenda-Sujecka, K. (2023). The neuroscience of story: The role of storytelling in psychotherapy. *Global Psychotherapist*, 3(1), 133–135.
<https://doi.org/10.52982/lkj192>
- Koenig Kellas, J., & Kranstuber Horstman, H. (2014). Communicated narrative sense-making: Understanding family narratives, storytelling, and the construction of meaning through a communicative lens. In L. H. Turner & R. West (Eds.), *The sage handbook of family communication* (pp. 76–90). Thousand Oaks, CA: Sage.
<https://doi.org/10.4135/9781483375366>
- Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of Educational Objectives: The Classification of Educational Goals Handbook II: The Affective Domain*. New York, NY: David McKay Company, Inc.
- Kreuter, M. W., Green, M. C., Cappella, J. N., Slater, M. D., Wise, M. E., Storey, D., ... Woolley, S. (2007). Narrative communication in cancer prevention and control: A framework to guide research and application. *Annals of Behavioral Medicine*, 33, 221–235.
doi: [10.1007/BF02879904](https://doi.org/10.1007/BF02879904)
- Kromka, S. M., & Goodboy, A. K. (2019). Classroom storytelling: Using instructor narratives to increase student recall, affect, and attention. *Communication Education*, 68(1), 20–43.
<https://doi.org/10.1080/03634523.2018.1529330>
- Landrum, R. E., Brakke, K., & McCarthy, M. A. (2019). The pedagogical power of storytelling. *Scholarship of Teaching and Learning in Psychology*, 5(3), 247–253.
<https://doi.org/10.1037/stl0000152>
- Labov, W. (1972). *Language in the inner city: Studies in the black English vernacular*. Philadelphia, PA: University of Pennsylvania Press.
- Leonard-Barton, D. (1990). A dual methodology for case studies: Synergistic use of a longitudinal single site with replicated multiple sites. *Organization Science*, 1(3), 248–266.
<http://www.jstor.org/stable/2635005>
- McAdams, D. P., Diamond, A., de St. Aubin, E., & Mansfield, E. D. (1997). Stories of commitment: The psychosocial construction of generative lives, *Journal of Personality and Social Psychology*, 71, 678-694.
<https://psycnet.apa.org/buy/1997-07966-018>
- MacDonald, M. R. (Ed.). (1998). *Traditional storytelling today: An international sourcebook*. Chicago, IL: Fitzroy Dearborn.
<https://doi.org/10.4324/9781315061610>
- Martin, K. J. (2000). “Oh, I have a story”: Narrative as a teacher’s classroom model. *Teaching and Teacher Education*, 16, 349–363. doi: [10.1016/S0742-051X\(99\)00066-9](https://doi.org/10.1016/S0742-051X(99)00066-9)
- Martinez-Conde, S., Alexander, R. G., Blum, D., Britton, N., Lipska, B. K., Quirk, G. J., Swiss, J. I., Willems, R. M., & Macknik, S. L. (2019). The storytelling brain: How neuroscience stories help bridge the gap between research and society. *Journal of Neuroscience*, 39(42), 8285–8290.
<https://doi.org/10.1523/JNEUROSCI.1180-19.2019>
- Milivojevic, B., Varadinov, M., Vicente Grabovetsky, A., Collin, S. H., & Doeller, C. F. (2016). Coding of event nodes and narrative context in the hippocampus. *Journal of Neuroscience*, 36, 12412–

12424.
<http://dx.doi.org/10.1523/JNEUROSCI.2889-15.2016>
- Muddiman, A., & Frymier, A. B. (2009). What is relevant? Student perceptions of relevance strategies in college classrooms. *Communication Studies*, 60(2), 130–146. <https://doi.org/10.1080/10510970902834866>
- Neilsberg Research (2024). Columbia, SC Population by Race & Ethnicity for 2005. [Columbia, SC Population by Race & Ethnicity - 2024 Update | Neilsberg](#)
- Norton, R., & Nussbaum, J. (1980). Dramatic behaviors of the effective teacher. *Annals of the International Communication Association*, 4(1), 565–579. <https://doi.org/10.1080/23808985.1980.11923825>
- Norton, R. W. (1983). Communicator style: Theory, application, and measures. Beverly Hills, CA: Sage.
DOI: [10.1017/S0047404500011180](https://doi.org/10.1017/S0047404500011180)
- Ochs, E. (1997). Narrative. In T. van Dijk (Ed.), *Discourse as structure and process* (pp. 185–207). London, UK: Sage.
[Discourse as structure and process : Free Download, Borrow, and Streaming : Internet Archive](#)
- Oatley, K. (2008). The mind's flight simulator. *The Psychologist*, 21, 1030–1031. [The mind's flight simulator. \(apa.org\)](#)
- Peseschkian, N. (2016). *Oriental Stories as Techniques in Positive Psychotherapy*. Bloomington, USA: AuthorHouse, p. 326.
[AuthorHouse](#)
- Romer, D., Hornik, R., Stanton, B., Black, M., Li, X., Ricardo, I., & Feigelman, S. (1997). “Talking” computers: A reliable and private method to conduct interviews on sensitive topics with children. *Journal of Sex Research*, 34(1), 3-9.
<https://doi.org/10.1080/00224499709551859>
- Romer, D., Sznitman, S. R., Hennessy, M. F., DiClemente, R. J., Salazar, L. F., Vanable, P. A., Carey, M. P., Brown, L. K., Valois, R. F., Stanton, B. F., Fortune, T. T. & Juzang, I. (2009). Mass media as an HIV-prevention strategy: Using culturally sensitive messages to reduce HIV associated sexual behavior of at-risk African-American youth. *American Journal of Public Health*, 99(12), 2150–2159. PMID: 2775758
<https://doi.org/10.2105/AJPH.2008.155036>
- Ruscher, J. B. (2014). Storytelling from a three-legged stool. *APS Observer*, 27, 11.
- Santarcangelo, M. (2014, February, 18). 3 basic elements every good story needs. <https://securitycatalyst.com/3-basic-elements-every-good-story-needs/>
- Schank, R. C., & Abelson, R. P. (1977). Scripts, plans, goals, and understanding: An inquiry into human knowledge structures. Hillsdale, NJ: Erlbaum.
<https://doi.org/10.4324/9780203781036>
- Schank, R. C., & Abelson, R. P. (1995). Knowledge and memory: The real story. In R. S. Wyer Jr. (Ed.), *Knowledge and memory: The real story—Advances in social cognition* (Vol. VIII, pp. 1–86). Hillsdale, NJ: Erlbaum.
- Schank, R. C., & Berman, T. R. (2002). The pervasive role of stories in knowledge and action. In M. C. Green, J. J. Strange, & T. C. Brock (Eds.), *Narrative impact: Social and cognitive foundations* (pp. 287–313). New York, NY: Psychology Press. [The Pervasive Role of Stories in Knowledge and Action | 15 | Narrative \(taylorfrancis.com\)](#)
- Sheafer, V. (2017). Using digital storytelling to teach psychology: A preliminary investigation. *Psychology Learning & Teaching*, 16, 133–143.
<http://dx.doi.org/10.1177/1475725716685537>
- Simmons, A. (2006). The story factor: Inspiration, influence, and persuasion through the art of storytelling (Rev. ed.). Basic Books.
<https://www.jstor.org/stable/10.2307/27340124>

- Torok, S. E., McMorris, R. F., & Lin, W. (2004). Is humor an appreciated teaching tool? Perceptions of professors' teaching styles and use of humor. *College Teaching*, 52, 14–20. DOI:[10.3200/CTCH.52.1.14-20](https://doi.org/10.3200/CTCH.52.1.14-20)
- Truby, J. (2008). *The anatomy of story: 22 steps to becoming a master storyteller*. Farrar, Straus and Giroux. https://www.goodreads.com/book/show/1383168.The_Anatomy_of_Story
- Valois, R. F. (1984). An evaluation of the effects of a human sexuality program on the attitudes of university residence hall students. *Eta Sigma Gamma Monographs*, 2(2), 15-21.
- Valois, R. F. (1993). Values clarification in sexuality education: Dynamic utilization of the Alligator River Story. *American Journal of Health Education*, 24(3), 184–185. <https://doi.org/10.1080/10556699.1993.10616388>
- Valois, R. F., Ory, J. C., & Stone, D. B. (1989). A study of the relationship between cognitive and affective taxonomic performance in Health Education. *Advances in Health Education: Current Research*, 2, 27-45. [Advances in health education : current research 1988-1993 : Veillon, E : Free Download, Borrow, and Streaming : Internet Archive](https://doi.org/10.1080/1045988X.1991.9944582)
- Valois, R. F., Adams, K. G. & Kammermann, S. K. (1996). One-year evaluation results from CableQuit: A community cable television smoking cessation pilot program. *Journal of Behavioral Medicine*, 19(5), 479-499. <https://doi.org/10.1007/BF01857680>
- Valois, R. F., Zullig, K. J., Young, M. A. & Kammermann, S. K. (2010). Changing health behavior in youth: Plus 40 Years. *American Journal of Health Education*, 41(3), 134-138. <https://www.tandfonline.com/journals/ujhe20>
- Valois, R. F. (2025). Storytelling as an instructional methodology in behavioral and clinical medicine: Scientific foundations and pedagogical effectiveness. *Teaching and Learning in Medicine* (Manuscript in Review)
- Wanzer, M. B., Frymier, A. B., & Irwin, J. (2010). An explanation of the relationship between instructor humor and student learning: Instructional humor processing theory. *Communication Education*, 59, 1–18. [doi:10.1080/03634520903367238](https://doi.org/10.1080/03634520903367238)
- Willingham, D. T. (2009). *Why don't students like school?* San Francisco, CA: Jossey-Bass. DOI:[10.1002/9781118269527](https://doi.org/10.1002/9781118269527)
- Wills, J.E. (1992). Lives and other stories: Neglected aspects of the teacher's art. *The History Teacher*, 26(1), 33-49. [Lives and Other Stories: Neglected Aspects of the Teacher's Art on JSTOR](https://www.jstor.org/stable/471614)
- Young, M. A., & Valois, R. F. (2010). Magic, morals and health: Plus 40 years. *American Journal of Health Education*, 41(1), 20-21. <https://www.tandfonline.com/journals/ujhe20>
- Zabel, M. K. (1991). Storytelling, myths, and folk tales: Strategies for multicultural inclusion. *Preventing School Failure: Alternative Education for Children and Youth*, 36(1), 32–34. <https://doi.org/10.1080/1045988X.1991.9944582>
- Zimmerli, W. H. (1978). Administrative techniques: General considerations. In D. A. Bedworth & A. E. Bedworth (Eds.), *Health education: A process for human effectiveness* (p. 229-232). Haper & Row Publishers. [Health education : a process for human effectiveness : Bedworth, David A : Free Download, Borrow, and Streaming : Internet Archive](https://www.jstor.org/stable/471614)