Using Visual Narratives (Comics) to Increase Literacy and Highlight Stories of Social Justice: Awakening to Truth and Reconciliation

Jessica Motherwell McFarlane, Ph.D.

How can creating a simple stick figure comic help us tell — and deeply listen to — true stories of social injustice and practice anti-oppression strategies? More specifically, how can creating a series of stick-figure comics help learners enhance their understanding of the Indigenous Peoples' testimonies in the Truth and Reconciliation Report (TRC, 2015)? In my experience, stick-figure visual narratives can help participants tell stories of social injustices and practice ways that might restore right relations. In this paper, I provide a background story and a literature review in describing the rationale and method of using this approach to teach social justice concepts and rehearse pro-social interventions. I conclude with a detailed lesson plan for using the social-justice comics method for visually presenting the TRC 2015 report.

Comment l'acte de dessiner un bonhomme allumette peut-il nous aider à raconter – et à écouter très attentivement – des histoires vécues d'injustices sociales et à adopter des stratégies contre l'oppression? Plus particulièrement, comment des apprenants, en créant une série de bonhommes allumettes, peuvent-ils mieux comprendre les témoignages des Autochtones inclus dans le rapport de la Commission de vérité et de réconciliation (2015)? D'après mon expérience, les récits visuels en bonhommes allumettes aident les participants à raconter leurs histoires d'injustices sociales et à mettre en pratique des moyens pour éventuellement rétablir des relations justes. Dans le présent article, je décris le contexte et les études qui sous-tendent le pourquoi et la méthode des bonhommes allumettes pour enseigner les concepts de justice sociale et exercer la pratique d'intervention sociale. En conclusion, je présente un plan de leçon indiquant comment utiliser la méthode des dessins à portée sociale pour représenter visuellement le rapport de la Commission de vérité et de réconciliation de 2015.

My visual narrative story began when I first designed and then offered *Life Outside the Box* comics-based lesson plans to teach at-risk youth about grit, resiliency and character strengths (Author, 2018). In every classroom I visited across B.C., I encountered consistent — sometimes remarkable — learning outcomes when using various visual narrative techniques. Inspired by this success with middle schoolers, I adapted and then introduced the social-justice comics into post-secondary classrooms and workshops for professional educators, where I observed similar success.

The purpose of this paper is three-fold. First, I review the literature about the general learning and memory advantages of drawing and comics. I discuss the special advantages of using stick-figure comics to create visual narratives. I present evidence-based and theoretical discussion from the disciplines of neurophysiology, cognitive psychology, reading and literacy, visual narratives studies and analyses of the drawing process. Second, I discuss my observations — from an educator's perspective—when using the social-justice comics lesson plan for visually retelling Indigenous Peoples testimonies in the Truth and Reconciliation executive summary (TRC, 2015). I will be reflecting on my general observations and noting procedures that tend to facilitate participants image-making process and understanding of the TRC content. Third, I will present in step-by-step detail the methodology for the social-justice comics lesson plan.

Truth and Reconciliation Visual Narratives — The back story

In 2015, I was teaching approximately 100 students in a diversity course for the Law Enforcement Studies program at the Justice Institute of British Columbia. I am a White, female, feminist educator from British settler heritage and was completely new to teaching indigenous course content. Our students were 18 to 23-year-olds who were motivated to be of service in law enforcement. Many were only just awakening to some social justice issues such as racism, sexism, and colonialism. Lessons about social justice could be contentious as some students journeyed from first disbelieving that bias and institutional discrimination existed, to eventually acknowledging the reality of social injustices, to adopting a critical practice routinely looking for systemic bias and discriminatory practices and policies. In addition, a significant number of our students were reluctant readers—able to read but choosing not to. To address the above teaching/learning challenges, I routinely adopted a practice of finding creative or surprising new ways for our students to encounter and learn from the diverse course content.

Then the Truth and Reconciliation (TRC) executive summary (with approximately 250 pages of text, excluding references and appendices) was published. I was inspired to design a vigorous and meaningful response to the TRC's call to indigenize course content. I knew that our law enforcement studies students would not have the capacity or motivation to read 250 pages of text. I also knew that asking our students to witness the TRC testimonies of people who were harmed in residential schools and other colonialized institutions would be emotionally arduous and potentially triggering—especially for our Indigenous-identifying students.

I decided to divide up the TRC challenge amongst all 100 students, each reading approximately 2.5 pages until they collectively had read the entire document, cover-to-cover. I adapted the social-justice comics lesson plan to suit a post-secondary audience so learners could translate their assigned textual reading into visual narrative form. It was my impression as I observed the social-justice-comics activities in various settings that the majority of participants found creating stick-figure social-justice-comics enjoyable. The visual narrative style seemed to me to be particularly suitable for conveying the emotional content of the TRC stories. In addition, most students felt proud to be engaging in reading the TRC report.

After the TRC report was read and the comics created, we assembled the images in order of the page numbers in the TRC report. I booked the JIBC theatre and document camera. Each student lined-up on stage, narrated her or his comic, and quietly walked back to sit and experience the unfolding visual narrative. I was astonished to observe the hush in the theatre and the sustained focus of our students as they actively leaned in to read each stick-figure

comic. Students silently lined-up, awaited their time on stage at the document camera, and quietly walked off stage as if performing their individual role in a greater collective visual narrative of the TRC stories. That is, students were witnessing through a series of visual narrative performances. Some students were moved to tears by the stick-figure depictions of the stories of atrocities toward the children in residential schools. The stick-figure style seemed to underscore the vulnerability of the children. When I compared students' before and after comics—personal learning reflections—about students' own attitudes to learning about Indigenous issues, I found the majority of students became more aware of institutionalized abuse, neglect and violence and more empathetic toward survivors of residential schools. Each learner created before-and-after images reflecting on their anticipation before and experiences after witnessing the TRC testimonies. While a minority of students indicated that their opinion about learning Indigenous issues did not change, many students depicted self-portraits showing shock, tears, and a newly formed perspective after reading/listening to the collective TRC visual narrative. As an educator, I was astonished to observe the sincere efforts and open hearted reactions of the group to each person's stick-figure TRC comic presentation. The whole social-justice-comics lesson was completed in one three-hour class. The presentation of the stick-figure comic panels of 100 students took about 65 minutes.

Facilitating these learners' visual narrative explorations of the TRC was surprising because it was simultaneously smooth, emotionally exhausting because of the traumatic TRC content, and deeply moving because of the sincerity and integrity that nearly every learner brought to the activity. Teaching the social-justice comics to our students so they could translate the TRC report into a visual narrative and then perform their witnessing of the TRC stories was, and remains, profoundly moving for me as the facilitator/educator. I have offered this TRC visual narrative workshop to seven cohorts of students and at four conferences and still find that facilitating retelling the stories told in stick-figure style are just as emotionally powerful with each offering.

Literature Review

Drawing, in general, benefits learning. For the purpose of our discussion, drawing is defined as a representation or look-alike of an object, character, or scene. Schematics, maps, and mind-mapping are not included in this discussion of drawing because they do not depict physical resemblance of the above (Van Meter & Garner, 2005, p. 288). Drawing by hand—as opposed to using computer assisted comic apps—adds a significant motor neurobiological experience that facilitates recall. The addition of human-computer interaction alters processing whereby the computer may perform some of the transformational tasks for the learner (Murphy et al. 2003). Comic Life and other comic or drawing apps can be used but may produce different results. Social-justice comics are drawn by hand using a sticker and markers. I have had learners use a comic book app to take selfie-like photos and act out how they would confront discrimination and restore right relations. The photos taken in the comic book app worked well for rehearsing social justice interventions. However, it would not be appropriate to act out scenes from the TRC or other complex, traumatic, or highly emotional texts.

Van Meter and Garner (2005) extensively studied learner-generated drawing of to-be-remembered words and concepts. Drawing words read in text gives the learner several benefits: improves observational processes or 'seeing better how it works' (Stein and Power, 1996), improve text comprehension in remedial readers (Fisher, 1976), stimulates greater interest in the text content (e.g., Ernst, 1997), encourages higher-order thinking (Britton and Wandersee, 1997), and increases students' enjoyment of the learning activity (Biller, 1994). In addition, drawing (and comic-creating) is

intersubjective and leads to deeper reflection. Grennan (2017) explains that drawing is not just the finished product but rather the collection of every moment of "trying-to, in failure-to and in success-in achieving the goal of making them" (p121). Creating visual narratives may successfully achieve learning objectives because the intersubjective dance between the drawer and the drawn is a form of thinking through physical performance. In sum, drawing out concepts in the text under study necessitates the insertion of pauses, one's own cognitive and emotional reactions, interior changes in perspectives, and a re-thinking of the meaning of the document that reading alone does not provide.

Wammes, & Meade (2018) found that drawing to illustrate a list of words, called the drawing effect, boosts memory. These researchers (Wammes, Meade & Fernandes, 2016) explained that drawing causes the learner to:

1. Elaborate on meaning (semantic processing)
2. Engage in hand movements (motor action); and
3. Visually inspect her/his/their created image (pictorial processing).

The optimal integration of the above three modalities while drawing provides additional vivid contextual information that text alone does not provide. Furthermore, these researchers found that the drawing effect is significant even when learners are given brief, 60-second drawing sessions and even shows a positive effect on memory recall when the time constraint is as short as four seconds. Of relevance to social-justice comics activities, Fernandes, Wammes, & Meade (2018) have shown the drawing effect benefit can be achieved regardless of artistic talent, (p. 306), concluding that the drawing effect is reliable and robust across conditions and experiments. The drawing effect has been shown to improve memory recall in older adults (Ally et al., 2008; Luo, Hendricks, & Craik, 2007) and has showa "massive" benefit for patients with dementia (Meade, Wammes, & Fernandes, 2018, p. 306).

Drawing is intersubjective and leads to deeper reflection. Grennan (2017) proposes that the process of drawing is intersubjective. A drawer begins with a goal, makes a mark, then stops to reflect, and that reflection leads the drawer to change perspectives, modify the goal, and make the next mark. Drawings, Grennan argues, are not just finished products or images but rather the collection of moments. Applying this intersubjective analysis to the process of visual narratives, the comic-creator (drawer) is changed and knows more about the subject at hand because of the intersubjective, back-and-forth between the author and the comic even when hesitating, making mistakes, erasing, starting over and ultimately succeeding in creating a visual narrative.

Social-justice comics provide several opportunities for learners to experience inter subjective deeper reflection. After reading the TRC, learners must decide what they think and how they feel about the content. Then, learners must decide what content would be interesting and important enough to teach back to peers. After choosing only two teachable scenes from the TRC pages read, the learner must reflect on how best to present the scene: composition, colour, and characters of the comic, how to use the required art materials, and what thought or speech balloons would best convey meaning. Artistic and semantic decisions are made throughout the process of creating the stick-figure comic. All the while the learner must be mindful of the intentional time-limit on the activity and limit the details in the comic to fit within the time constraint. Social-justice-comics provide learners with significant opportunities to imagine what peers need to know and reflect on how best to achieve that with a simple stick-figure image.

In this section, I will review some theories and evidence in the literature that may suggest how comics and, more specifically, stick-figure visual narratives can increase literacy and deepen understanding and empathy.

Drawing, in general, bestows considerable memory recall advantages and opportunities to reflect on a learner who draws while studying. What further advantages are there when the drawing comes in the form of a comic or a series of visual narrative panels? The next section explores how comics give learners the experience of being an immersed experiencer, a strategy to reduce cognitive bias, encouragement and greater participation in the content, and discernment and other learning skills. In addition, comics and the gaps between panels may also provide innovative story-telling devices to sensitively talk around catastrophic events without having to directly depict traumatic events.

Comic-creating is an immersive experience. Bergen (2012) explains that "understanding language in multimodal ways is a lot like being there" (p.92). Making a link from Bergen's discussion to the social-justice comics method, the multimodal process of creating and reading visual narratives encourages an "immersed experience" in which one can project her or himself "into a body of a character and simulate what it would be like to do things someone is described as doing" (p. 92). This automatic mental simulation of the actions of characters in a story is a remarkable and powerful tool for educators. Along a similar line, Polak (2017) explains how visual narratives "prompt the reader to engage differently (when compared to text-only modes) with content, particularly in terms of empathy and identification (p. 1). As a matter of course, in classrooms and workshops, I have observed that many comic-creators and readers/listeners become fascinated, "immersed experiencers" and in many instances show empathy for the subjects (characters) in the personal and social justice stories depicted.

A social-justice comics lesson plan may reduce cognitive biases. Reality is far more complex than we can ever perceive. Wilson (2004) estimates that we are exposed to eleven million pieces of information per second. The genius—and curse—of human cognition is that we have pre-cognitive biases that help us only attend to the stimuli that are relevant to our physical, psychological and social lives. There is a large body of evidence showing these implicit, confirmation, and other cognitive biases (e.g., see Banaji & Bhaskar, 2000). For example, Ayodogan et. al (2018) measured the neurophysiological effect of introducing a bias prior to participants judging a musical performance. These researchers found that the pre-task bias had effects on the participants ability to accurately perceive the music over a long duration. Fortunately for educators and other professionals, Ayodogan et al. (2018), also have preliminary data showing that "deliberative thinking" can reduce the behavioural bias that results from pre-existing cultural stereotypes and other biases. Specifically, these researchers have shown that "deliberate and effortful thinking can play a crucial role in overcoming cognitive heuristics related to socially constructed concepts and stereotypes" (p. 8). Thus, the method involved in the social-justice comics lesson plan (i.e., read text, choose two teachable moments out of several possibilities, transcribe text into visual narratives, show comics to peers, and tell peers about the comic), scaffolds and sustains experiences that invite participants to engage in precisely the "deliberate and effortful thinking" that can lead to reduced cognitive bias.

Inviting visual structures encourage greater participation. Postema (2013) explains that visual narratives—and the gaps between panels (i.e., gutters)—invite readers to "reconstruct" the written text. In other words, "readers use their knowledge of actions, of causality, to fill in gaps" (p. 107). Postema calls this filling-in the gaps "darning the holes" (p. 113) in the story. Comics and the gaps between panels make readers active participants in discerning the meaning and significance. The image/text

narrative becomes "a system of reconstruction-inviting structures" (Postema, 2013). Comics invite a reader's more vigorous participation and reconstruction of the story out of the fragments (panels and gaps) than text-only narratives. The gutters or gaps play a role in the invitation to be an active reader. Postema explains that the plot of comics depends upon readers filling in the gaps in the story (p. 113). The gutter and the reader's inferences are as crucial to moving the plot along as the content in each panel.

Creators must use discretion to choose which detail to show. When readers transcribe text into visual narrative form, they must discern which elements and issues are most important and should be included, and which can be set aside. Furthermore, out of all of the elements and issues that are worthy of discussion, the comic-creator must choose one issue upon which to focus and then abstract (e.g., in the current workshop, using stick figures) the essential elements of the story under study. Duncan, Smith, Levitt, (2015) call this abstraction process, synecdoche: "using part of something to represent the whole thing. All images on the comic book page stand for more reality then they can depict ... the images are, by necessity, and abstraction from the real" (p. 144). Educators will recognize that to choose, discern, and abstract are activities that can be classified as application, analysis, and synthesis, respectively, on Bloom's Taxonomy of Learning.

Comics represent the unrepresentable. Creating visual narratives for the purpose of witnessing, documenting and truth-telling can sometimes mean connecting with stories of catastrophic harm. Polak (2017) explains that "graphic narratives engage the readers' emotions and ethical norms in complex ways in the representation of historical atrocity" (p. 2). Polak frames this ethical challenge as "the need to represent the unrepresentable" (p. 7). Some catastrophic harm is "unrepresentable" because it is too traumatic to depict directly without being triggering. Catastrophic harm must, therefore, be visualized obliquely by showing the outcome rather than the harm-in-process. This challenge of how to respectfully engage in stories of historical atrocities is especially relevant when working with the Truth and Reconciliation testimonials. Respectful construction of visual narratives and the conscientious use of gutters (gaps) between panels allow readers to infer rather than be explicitly shown extreme depictions. Thus, visual narratives can help provide a trauma-informed process to help readers safely and truthfully engage in historical material that has the potential to trigger emotional distress.

Thus far, we have discussed the considerable advantages of drawing out concepts being read in texts. We have also seen that the genre of comics and the process of creating visual narratives multiplies the learning advantages of drawing. We have one final powerful comic imaging technique to consider—stick-figure comics.

Stick-figure visual language is at-the-ready in the human brain. Peelen and Downing (2005) found evidence that the body-selective fusiform region of the human brain responds stick-figure depictions of bodies. In other words, neural activity in this area of a healthy human brain only occurs if a person is viewing a stick-figure body, that is, a stick torso combined with two stick arms and two stick legs oriented in a way to look like a human. The stick-figure body does not even need a circle for a head for us to recognize that we are seeing a stick-figure person. Astonishingly, humans are biologically ready to communicate in a visual narrative language, using stick figures. This neurophysiological readiness to interpret and create stick-figure comics means educators may use stick-figure visual narratives to engage students who are reading/writing-challenged or reluctant to participate in text-based lessons that require story-telling or documenting their understanding. Indeed, I have observed how people, both children and adults, easily take to the stick-figure form with very little instruction required.

When learners read the TRC and are instructed to teach back what they understand using a stick-figure comic, they are not only accessing the advantages of learner-generated drawing, and the other cognitive and reflective gifts involved in the drawing effect, and further benefiting from the story-telling advantages and learning outcomes involved in comics. They are also tapping into an in-born, stick-figure visual language that can be accessed, used and comprehended with relative ease. I have observed that most participants find stick-figure story-telling fairly easy: easy to get started, easy to be creative, easy to populate the image with essential characters in the scene, easy to elaborate on one's message through well placed thought and speech balloons, and, when corresponding show-and-tell verbal narration is provided, easy to enter into the dramatic stick-figure scene created by peers. This at-the-ready, neurobiologically-primed, stick-figure visual language ability may be the key to the apparent instant immersion into the TRC content that I experience as the facilitator and observe in participants.

Summary

At first glance, stick-figure comics may seem to be just beginners' art—something small children start with and then give up in favour of real drawing. The consistent success in using stick figure comics in a variety of educational settings, however, strongly suggests that there is more to stick-figure story telling than beginners' scribbling. The current literature review yielded several theories and some scientific evidence that may help answer the question: "How do stick-figure visual narratives increase literacy, deepen understanding, decrease biases, and grow empathy?" Specifically, there were 13 lines of inquiry that might help explain the success of the social-justice comics:

1. Drawing by hand adds significant motor neurobiological experience that facilitates recall.
2. Drawing by hand what is read in text improves observational processes (Stein and Power, 1996); improves text comprehension in remedial readers (Fisher, 1976); stimulates greater interest in the content (e.g., Ernst, 1997); encourages higher-order thinking (Britton and Wandersee, 1997) and increases students' enjoyment of the learning activity (Biller, 1994).
3. Drawing (comic-creating) is intersubjective and leads to deeper reflection.
4. Drawing to illustrate a list of words boosts memory (the drawing effect).
5. The drawing effect is significant even when learners are given a very brief drawing session.
6. The drawing effect benefit can be achieved regardless of artistic talent (Fernandes, Wammes, & Meade, 2018, p. 306).
7. The drawing effect is reliable and robust and has been shown to improve memory recall in older adults (Ally et al., 2008; Luo, Hendricks, & Craik, 2007).
8. Narratives encourage the reader's imagining being there which foster an "immersed experiencer" (Bergen, 2012).
9. Social-justice comics lesson plan may reduce cognitive biases by scaffolding and sustaining experiences that invite participants to engage in precisely the "deliberate and effortful thinking" that can lead to reduced cognitive bias. (Ayodogan, et al., 2018).
10. Comics are "reconstruction-inviting" visual structures that encourage greater participation (Postema, 2013).
11. In the social-justice comics lesson plan, participants must use discretion to choose which detail to show.
12. Respectful construction of visual narratives and the conscientious use of gutters (gaps) between panels allow readers to infer rather than be explicitly shown extreme depictions (Polak, 2017).
13. Perception of stick figures in visual narratives is built into the human brain (Peelen & Downing, 2015).

Far from being a beginning artist's scribble, the humble stick-figure comic appears to access a built-in visual language in the healthy human brain. Drawing for the purpose of representing the real world and stick-figure comics are two separate process—the former can take considerable time to master, the latter is an at-the-ready visual language system—ideal for telling stories in visual narrative form. The current literature search yielded several possible explanations for the success of the social-justice-comics. The observed successes in classrooms and workshops may be connected to any or some combination of the above findings/ theories.

Method

Social-justice comics lesson plan and procedural advice. In this section I will provide step-by-step instructions on the s*ocial-justice-comics* lesson plan and add advice about ways to help along a visual narrative lesson.

Materials

Figure 1. Stickers used in social-justice-comics. Participants are instructed they must use at least one sticker— and may use as many as they wish in their stick-figure comics.

Stickers: 8-10 "loopy" stickers per person (see Figure 1). These are Avery reinforcement stickers designed to be used for the holes in loose leaf papers. The neon coloured stickers can be used on white backgrounds. Unfortunately, these stickers are going out of print and are getting harder to find. Other, reinforcement stickers are available online.

Paper: 1 pre/post reflective comics worksheet (see Appendix A)
1 TRC visual narrative worksheet (see Appendix B)
(Optional: instead of worksheets, use 5" X 8" blank index cards)

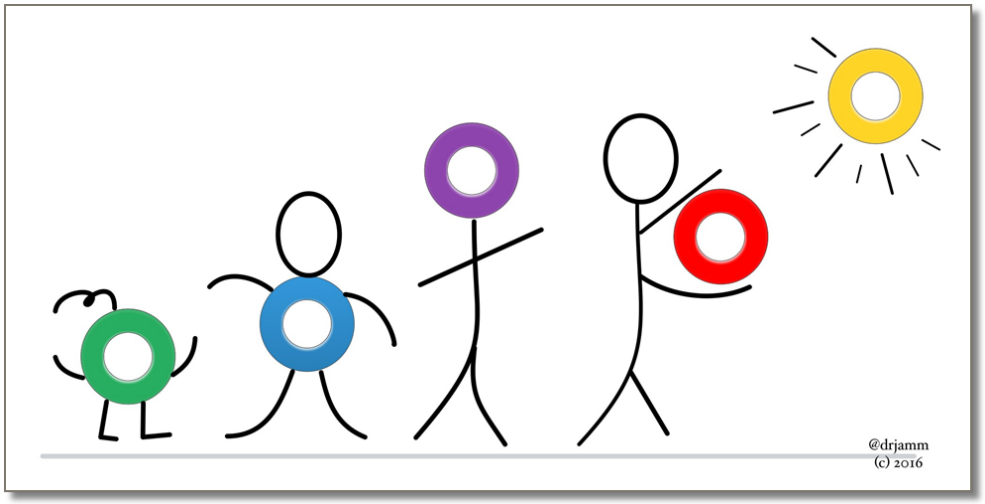


Figure 2. Examples of ways "loopy" stickers can be used to create stick-figure comics.

Markers: Use broad-tipped washable children's markers. Offer a variety of colours — enough for three colours per person. Note: These markers can bleed through a standard white page so single-sided printing is recommended. Optional: Offer well-used pencil crayons, sharpened to a good point and stored in a plastic bag or clear box.

Advice: 1) Take markers or pencil crayons out of the "pretty" store package and put loose in a plastic bag. A casual bag of markers is less intimidating for the "I can't draw!" folks than a perfectly packed set of markers. 2) don't offer pencils for two reasons: a) finished pencil marks are too faint to be seen during show and tell. b) some folks spend too much time erasing their work and redoing. Never offer erasers! 3) Permanent markers (e.g., Sharpie brand) are toxic, smell bad in classrooms and require a well-ventilated space. It is best to avoid permanent markers, especially with younger students.

Procedure

Warm-up activity. Design a warm-up stick-figure activity with a humorous theme that will generate a few chuckles or smiles during show-and-tell. For example, "create a comic that shows the first thing you said to a person today", or "the funniest conversation you overheard lately", etc. Share some or all comics in a show-and-tell session.

Advice: 1) Always offer a warm-up stick-figure activity within the first ten minutes of a session to avoid building anxiety for the "I can't draw!" folks. It is best to quickly set their mind at ease about how easy it is to make stick-figure comics. 2) Say, "there is only ONE rule: you MUST use at least ONE "loopy" sticker in each image. You may use as many stickers as desired so long as there is at least one sticker per image." This sticker appearing in one comic after another creates cohesion, similar art style, and visually "stitches together" the finished, collected visual narrative. 3) If desired, use Figure 2 to show some of the ways the loopy stickers can be used in a stick-figure comic. 3) Always give a ticking clock deadline to encourage quick, impressionistic stick-figure scenarios and discourage "perfectionistic works of art" which tend to cause drawing-challenged others to implode with feelings of incompetence. Thus, allow 2 minutes maximum on a countdown clock for warm-up activities and then get right to sharing.

TRC visual narrative procedure

1. "Pre-comic reflection" - Create an image that shows your typical reaction when you hear we will be covering Indigenous history or other issues. Be honest.
2. Read two pages from the Truth and Reconciliation report (2015).
3. Create two images of "teachable moments" from the pages.
4. Faithfully "bear witness" and reflect on the evidence in the report (no outside information).
5. Write corresponding page numbers on your images.

Advice: give several reminders to add the specific TRC page number to each comic panel — a detail easy to forget.

6. Assemble the "visual narrative" images in TRC page number order.
7. Show-and-tell: each person narrates her/his/their images. Allow approximately 30-45 seconds talking time per comic being presented.

8. Personal reflections. After show-and-tell create an image to describe your reaction to the information in the collective Truth and Reconciliation visual narrative.
9. I have included a social-justice-comic from a past student who read pages from the TRC *"Call to Action"* section. This student chose to use this teachable moment to reflect on the big picture of the past, present and future of Indigenous Peoples in Canada. (Note: the year 2015, depicted in the epicentre of the image, was the publication date of the TRC report.)

Advice: It is common for participants to fill in their post-reflections immediately after making their comic but before they have witnessed the entire groups collected works. Thus, I ask participants to put a post-it note over the post-reflection panel and leave it there to remind them that we all peel it off and do our post-reflections together after the entire TRC visual narrative has been read/performed.

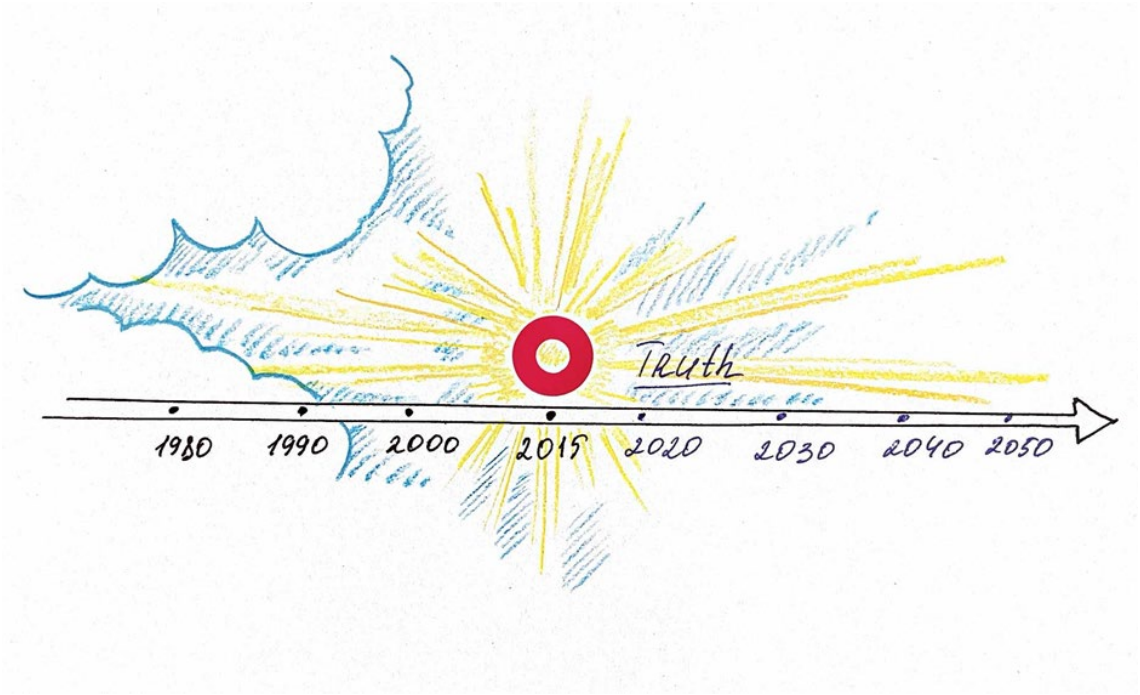


Figure 3. A comic created by a student while attending the Justice Institute of British Columbia, Law Enforcement Studies program (Image included with permission and anonymous by request).

Conclusion

I want to encourage other educators and facilitators to use the social-justice comics lesson plan for any content that requires "deliberate and effortful thinking" (Ayodogan et. al., 2018, p. 8) either because the text is dense or complex, or because the content is likely to generate strong emotional or moral reactions by learners. I will conclude by saying that I feel inspired as a teacher when my students read complex texts, bravely encounter painful stories of social injustices, respectively witness and then document via visual narratives those stories and, then, take leadership in teaching their peers. Time and again, I have observed the social-justice comics

References

Ally, B. A., Waring, J. D., Beth, E. H., McKeever, J. D., Milberg, W. P., & Budson, A. E. (2008). Aging memory for pictures: Using high-density event-related potentials to understand the effect of aging on the picture superiority effect. *Neuropsychologia*, 46(2), 679–689. https://doi-org.libproxy.jibc.ca/10.1016/j.neuropsychologia.2007.09.011

Aydogan, G., Flaig, N., Ravi, S. N., Large, E. W., McClure, S. M., & Margulis, E. H. (2018). Overcoming Bias: Cognitive Control Reduces Susceptibility to Framing Effects in Evaluating Musical Performance. *Scientific Reports*, *8*(1), 6229. https://doi.org/10.1038/s41598-018-24528-3

Banaji, M. R., & Bhaskar, R. (2000). Implicit stereotypes and memory: The bounded rationality of social beliefs. In D. L. Schacter & E. Scarry (Eds.), *Memory, brain, and belief.* (pp. 139–175). Cambridge, MA: Harvard University Press. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2000-07142-004&site=eds-live&scope=site

Bergen, B. K. (2012). *Louder Than Words : The New Science of How the Mind Makes Meaning*. New York, NY: Basic Books. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=e000xna&AN=489391&site=eds-live&scope=site p. 92.

Biller, J. (1994). *A Creative Concept in Teaching Math to Art Students: Make-a-Problem*. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED414219&site=eds-live&scope=site

Britton, L. A., & Wandersee, J. H. (1997). Cutting Up Text To Make Moveable, Magnetic Diagrams: A Way of Teaching and Assessing Biological Processes. *American Biology Teacher*, 59(5), 288–91. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ545273&site=eds-live&scope=site

Duncan, R., Smith, M.J. & Levitt, P. (2015). T*he Power of Comics: History, form, and culture (2nd ed)*. London: Bloomsbury Academic.

Ernst, K. (1997). When teachers share, too. *Teaching Pre K-8*, *27*(7), 62. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=9704110597&site=eds-live&scope=site

Fernandes, M. A., Wammes, J. D., & Meade, M. E. (2018). The surprisingly powerful influence of drawing on memory. *Current Directions in Psychological Science*, 27(5), 302–308. https://doi-org.libproxy.jibc.ca/10.1177/0963721418755385

Fisher, L. J. (1976). Language Arts: Pictures Tell the Tale. *Teacher*. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ142277&site=eds-live&scope=site

Grennan, S. (2017). *Theory of Narrative Drawing*. London: Palgrave Macmillan, p. 121. DOI 10.1057/978-1-137-51844-6_2

Final report of the Truth and Reconciliation Commission of Canada. (2015). Toronto : James Lorimer & Company Ltd., Publishers, 2015. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=cat02934a&AN=jibc.ocn913176212&site=eds-live&scope=site

Luo, L., Hendriks, T., & Craik, F. I. M. (2007). Age differences in recollection: Three patterns of enhanced encoding. *Psychology and Aging*, 22(2), 269–280. https://doi-

org.libproxy.jibc.ca/10.1037/0882-7974.22.2.269

Meade, M. E., Wammes, J. D., & Fernandes, M. A. (2018). Drawing as an Encoding Tool: Memorial Benefits in Younger and Older Adults. *Experimental Aging Research*, 44(5), 369–396. https://doi-org.libproxy.jibc.ca/10.1080/0361073X.2018.1521432

Motherwell McFarlane, J. A. (2018) *Life Outside the Box: Using comics to teach about grit, character, and resiliency. An education and crime prevention program for at-risk youth* conducted in partnership with the Justice Institute of British Columbia. Funded by a B.C. Civil Forfeitures grant. Manuscript in process.

Murphy, P. K., Long, J. F., Holleran, T. A., & Esterly, E. (2003). Persuasion Online or on Paper: A New Take on an Old Issue. *Learning and Instruction*, 13(5), 511–32. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ678508&site=eds-live&scope=site

Peelen, M. V., & Downing, P. E. (2005). Selectivity for the human body in the fusiform gyrus. *Journal of Neurophysiology*, *93*(1), 603–608. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=cmedm&AN=15295012&site=eds-live&scope=site

Polak, K. (2017). *Ethics in the Gutter: Empathy and historical fiction in comics*. Columbus: The Ohio University State Press.

Postema, B. (2013). *Narrative Structure in Comics: Making sense of fragments*. New York: Rochester Institute of Technology.

Stein, M. and Power, B. (1996) Putting art on the *scientist's* palette. In Hubbard, R. S., & Ernst, K. (eds.), *New Entries: Learning by Writing and Drawing*. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED396295&site=eds-live&scope=site

Van Meter, P., & Garner, J. (2005). The Promise and Practice of Learner-Generated Drawing: Literature Review and Synthesis. *Educational Psychology Review*, *17*(4), 285–325. https://doi-org.libproxy.jibc.ca/10.1007/s10648-005-8136-3

Wammes, J. D., Meade, M. E., & Fernandes, M. A. (2016). The drawing effect: Evidence for reliable and robust memory benefits in free recall. *Quarterly Journal of Experimental Psychology* (2006), 69(9), 1752–1776. https://doi-org.libproxy.jibc.ca/10.1080/17470218.2015.1094494

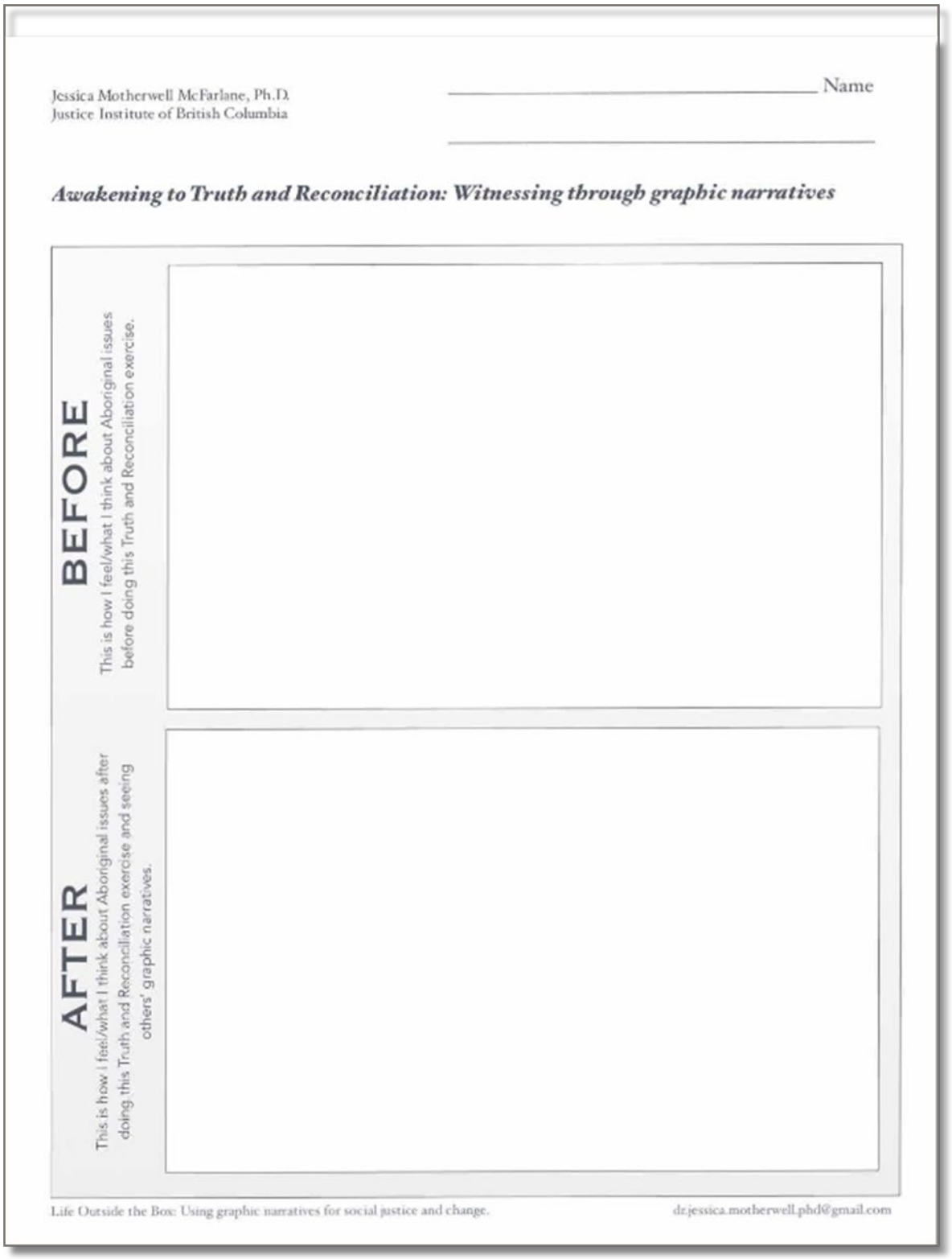
Wammes, J. D., Meade, M. E., & Fernandes, M. A. (2018). Creating a Recollection-Based Memory through Drawing. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 44(5), 734–751. Retrieved from http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1178424&site=eds-live&scope=site

Wilson, T. (2004). *Strangers to Ourselves: Discovering the Adaptive Unconscious*. Cambridge, MA: Belknap Press. (p. 24)

Biography

Jessica Motherwell McFarlane, Ph.D., is a research associate at the Justice Institute of British Columbia and a professional education consultant on gender, anti-oppression and social justice issues.

Appendix A



Jessica Motherwell McFarlane, Ph.D.
Justice Institute of British Columbia

_____ Name

_____

Awakening to Truth and Reconciliation: Witnessing through graphic narratives

BEFORE

This is how I feel/what I think about Aboriginal issues before doing this Truth and Reconciliation exercise.

AFTER

This is how I feel/what I think about Aboriginal issues after doing this Truth and Reconciliation exercise and seeing others' graphic narratives.

Life Outside the Box: Using graphic narratives for social justice and change.

dr.jessica.motherwell.phd@gmail.com

Appendix B

Jessica Motherwell McFarlane, Ph.D.
Justice Institute of British Columbia

Awakening to Truth and Reconciliation: Witnessing through graphic narratives

I read pages _____ to _____ of the Truth and Reconciliation Report.

This teachable moment is from page _____

This teachable moment is from page _____