The Ninth Art Versus The Tenth Art: Visualizing Conflicting Worldviews Between Comics and Screens

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ABSTRACT

In this article, I argue that deficient and declining opportunities for art in schools coupled with initiatives to incorporate computer literacy, coding and STEM (Science, Technology, Engineering, Mathematics) as priorities forecast a dire future for the comics medium as pedagogical tool. Additionally, one result of the medium's historical debasement is that most educators are unfamiliar with ways to use comics and cartooning; thus classroom opportunities for students to engage in a medium they love are rare. In this study, I investigate integrating the language of comics into classroom learning strategies and research some of the ways writing/cartooning can help students negotiate conceptions of identity. I wrote a lesson plan that weaved connections between making comics and teaching curriculum, and taught the twenty-five participants sequential narratives through freehand cartooning. This study investigates some of the ways drawing fictional comics can support students' learning and negotiations of identity in the classroom.

This is a qualitative research project that gathers data in the form of student-generated art and one-on-one audio interviews with three participants. A/r/tography, semiotics, and life-writing inform the study's progress as I research participants' understandings through comics. Conceptions of identity and authorship emerge in the participants' comics, as well as in my own explorations of life-writing.

A class of twenty-five bilingual grade four students participated in this study. Due to time constraints and the large volume of data generated, I narrowed the scope of the study to three participants, thus creating opportunities for more detailed analysis of information. Data tracking was supported by theories of authorship such as l'auteur complet [the complete author] (Groensteen, 2012; Uidhir, 2012) and l'écriture féminine [the feminine writing] (Cixous & Clement, 1986; Sellars, 1996; Taylor, 2014). Deeper analysis of the students' comics reveals that the perception/drawing/meaning systems (Cohn, 2012) involved with image-making create unconscious (Hancock, 2009; Jung & Franz, 1964) pathways for students to engage and negotiate identity. In this way, they are personally invested in the narratives they create and thus engaged to learn and explore. This engagement is amplified when their works are to be displayed and, especially, printed into booklets as they were in this study.

KEYWORDS: Comics; a/r/tography; semiotics; educational research; cartooning

I believe there is a need to uncouple from the State's knowledge economy, which is now structured almost entirely upon digital technology (Herzog, 2016).

Military Industrial Academic

COMPLEX!

Giroux, 2015.

The knowledge economy keeps subjects *dependent on technology* and creates conditions that standardize *identity* for efficient management (Kanu & Glor, 2012; Keen, 2015; Ma, 1997; Marcuse, 1964).

I ARGUE THE BENEFITS-VERSUS-HARMS DEBATE SURROUNDING DIGITAL COMMUNICATION IN THE CLASSROOM NECESSITATES THE *CONCEPTUALIZING OF A BALANCE* BETWEEN REAL WORLD AND VIRTUAL WORLD EXPERIENCES FOR CHILDREN (BINDLEY, 2011; UHLS ET AL., 2014).

TABLET TV COMPUTER LAPTOP VIDEO GAME CONSOLE SMART PHONE
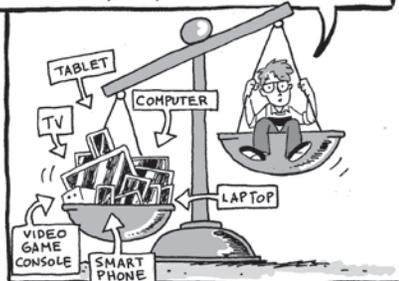
HOWEVER, STUDIES SHOW THAT THERE IS NO PERCEIVED BALANCE BECAUSE STUDENTS AGED 8-18 SPEND, ON AVERAGE, OVER SEVEN HOURS A DAY, SEVEN DAYS A WEEK ON DIGITAL MEDIA *OUTSIDE OF SCHOOL* (GIEDD, 2012; HARRIS, 2014; UHLS ET AL., 2014).

Opportunities for art-making appear to be *decreasing* as schools serve to train a technologically adept labour force of consumers (Noddings, 2007; Snaza, 2014).

"THE ESTHETIC VALUING OF EDUCATIONAL ACTIVITY IS OFTEN COMPLETELY IGNORED PERHAPS BECAUSE... ESTHETIC ACTIVITIES ARE NOT HIGHLY PRIZED TODAY IN SOCIETY" (HUEBNER ET AL., 1999, P. 109).

I SUGGEST THAT A DEFICIENCY OF OPPORTUNITIES FOR ART IN SCHOOLS FORECASTS A *DIM FUTURE FOR COMICS* AS A PEDAGOGICAL TOOL.

Studies have found links "between educational attainment and arts participation" (Hickey-Moody, 2013, p. 60)--

-- AND THAT SOME OF THESE LINKS LIE IN THE *REFLECTIVE* AND *COLLABORATIVE* ASPECTS WITHIN ARTS PRACTICES...

(BITZ, 2009, 2010; GIROUX, 1999; SCRIPP & PARADIS, 2014).

THERE ARE DECADES OF RESEARCH THAT ESTABLISH *COMICS* AS EFFECTIVE CLASSROOM TOOLS--YET MOST STUDIES EMPLOY FORMS OF COMICS FOR *READING* RATHER THAN A MEDIUM FOR *WRITING* (KRAVER, 2013; WILLIAMS, 2008).

A PERCEIVED LACK OF MAKING COMICS IN THE CLASSROOM IS DUE, IN PART, TO EDUCATORS BEING ONLY *PARTIALLY* LITERATE IN COMICS LANGUAGE.

Anthropologist Tim Ingold (2013) writes, "So long as it is done by hand, all writing is drawing" (p. 139). Therefore, the freehand cartooning of comics language (Brunetti, 2011; Groensteen, 2007) can be understood as writing.

Literacy is the ability to read and write a language (Collins & Blot, 2003). As such, many scholars, academics, and educators can read comics-- but they can't write comics.
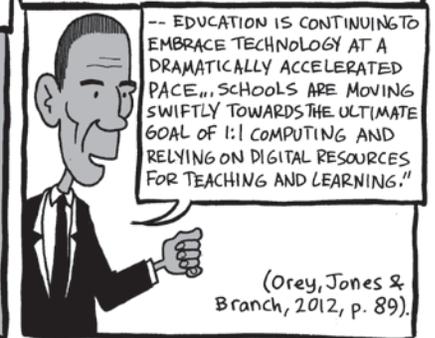
READING WRITING

Thus teachers' partial-literacy in comics, combined with the knowledge economy's technological *intensifications*, can reduce opportunities for freehand cartooning in education.
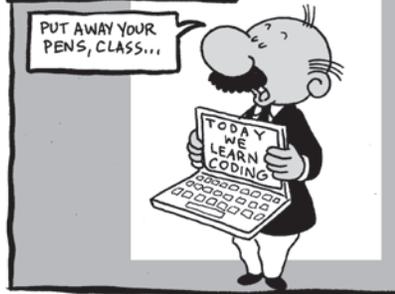
PUT AWAY YOUR PENS, CLASS...

TODAY WE LEARN CODING

For example, "President Obama called for greater technological literacy among young people in the country--

-- EDUCATION IS CONTINUING TO EMBRACE TECHNOLOGY AT A DRAMATICALLY ACCELERATED PACE... SCHOOLS ARE MOVING SWIFTLY TOWARDS THE ULTIMATE GOAL OF 1:1 COMPUTING AND RELYING ON DIGITAL RESOURCES FOR TEACHING AND LEARNING."

(Orey, Jones & Branch, 2012, p. 89).

Furthermore, British Columbia Premier Christy Clark announced in January 2016 that,

"IT IS MY GOAL TO MAKE SURE THAT IT DOESN'T JUST BECOME AN OPPORTUNITY FOR EVERY CHILD TO TAKE PART IN, BUT WE ULTIMATELY MAKE IT MANDATORY FOR EVERY CHILD FROM KINDERGARTEN TO GRADE 12 TO LEARN WHAT CODING IS AND HOW IT WORKS."

(Shaw & Shaw, 2016, para. 3).

In March 2017, Canada's Federal Government, under Prime Minister Justin Trudeau, unveiled a budget with increased funding to "grow the number of Canadians equipped with science, technology, engineering and mathematics (STEM), coding and digital skills in order to:

"HELP YOUNG CANADIANS GET THE SKILLS AND EXPERIENCE THEY NEED TO KICK-START THEIR CAREERS."

(Government of Canada, 2017).

Scholar Henry A. Giroux (2010) writes that "many educators have lost a meaningful language for linking schooling to democracy, convinced that education is now about job training, competitive market advantage, patriotic correctness, and a steady supply of labor for the national security state" (p.33).

ELEMENTARY SCHOOL
JOB TRAINING →

The demands of micromanagement in technology (Brunetti, 2011) are subsuming schoolchildren's developments in freehand writing and drawing. Continued intensification (Apple, 2005) of digital technology threatens to marginalize and damage physical and embodied multimodal experiences for students.
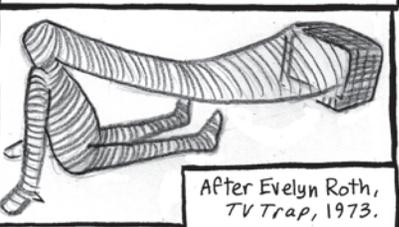
After Evelyn Roth, TV Trap, 1973.

STUDIES FIND THAT OVEREXPOSURE TO SCREEN-BASED TECHNOLOGIES CAN HAVE A DAMAGING EFFECT ON "PRETEENS' UNDERSTANDING OF NONVERBAL EMOTION CUES" (UHLS ET AL., 2014, P. 387) AND THAT CHILDREN'S INCREASED USE AND EXPOSURE TO DIGITAL SCREENS "MAY THUS CURTAIL THE FACE-TO-FACE EXPERIENCES NECESSARY TO MASTER IMPORTANT SOCIAL SKILLS" (P. 388) SUCH AS INTERACTING WITH PEOPLE.

THIS IS FURTHER SUPPORTED BY STUDIES THAT POINT TO THE IMPORTANCE OF NONVERBAL EMOTION CUE RECOGNITION IN THE DEVELOPMENT OF EMPATHY (CLARK, WINKIELMAN & McINTOSH, 2008; SZALAVITZ, 2010; ZAKI, BOLGER & OCHSNER, 2009).

Technological intensification emphasizes STEM over art as the State transitions from a technocracy to a Technopoly (Postman, 1992).
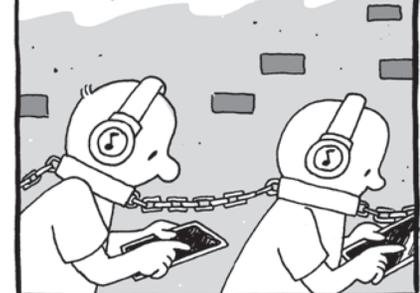
"AN INCREASING NUMBER OF JOBS AT ALL LEVELS...REQUIRE KNOWLEDGE OF STEM" AND "REPORTS HAVE LINKED K-12 STEM EDUCATION TO CONTINUED SCIENTIFIC AND ECONOMIC GROWTH" (NATIONAL RESEARCH COUNCIL, 2011, P. 3).

Member of the O.H.S.S.O. Committee

Thus coding, programming, and computer literacy are increasingly taking precedence over embodied activities such as freehand writing and drawing.

There are a number of studies that investigate positive implications of screen-based technology in schools (Corneliussen & Prøitz, 2016; Keraroudi et al., 2016)--

HOWEVER THESE DON'T ADDRESS THE IMBALANCE BETWEEN STUDENTS' LIFE-WORLD NEGOTIATIONS AND SCREEN-BASED MEDIATIONS.

If anything, I contend such studies can contribute to the decline of freehand writing and drawing in schools.

HEY, LOOK AT ME-- I'M UPLOADING CONTENT TO FACEBOOK FOR FREE!

NOW TO ORDER A NEW SMARTPHONE FROM AMAZON WITH PAYPAL.

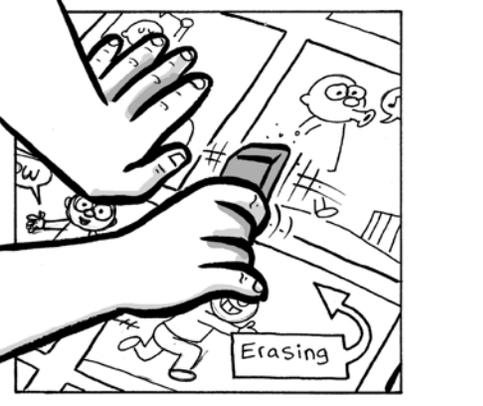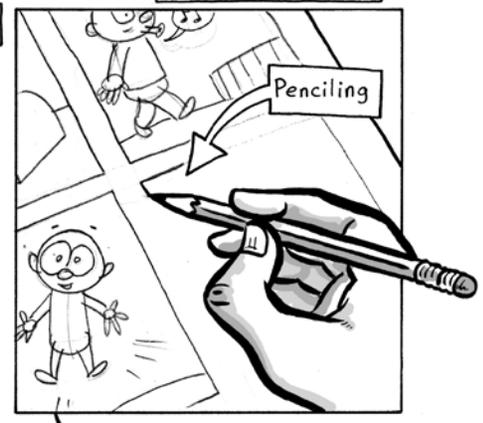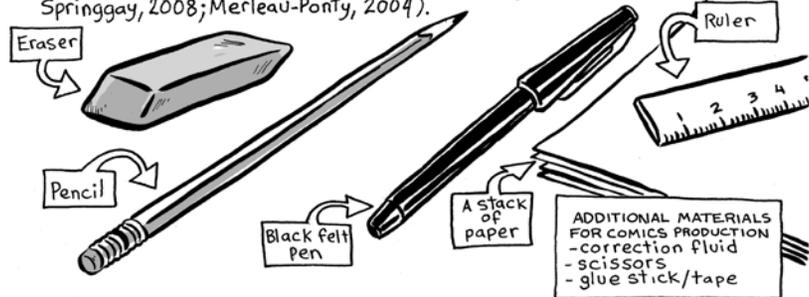I SUGGEST EDUCATORS INVESTIGATE METHODS TO MITIGATE THE PERCEIVED IMBALANCE BETWEEN CHILDREN'S LIFE-WORLD AND VIRTUAL-WORLD EXPERIENCES BY REDUCING EXPOSURE TO DIGITAL DEVICES IN ELEMENTARY SCHOOLS.

ONE WAY THAT STUDENTS CAN NEGOTIATE EMBODIED AND MATERIAL PRACTICES OF IDENTITY-EXPLORATION IS TO DEDICATE MORE SCHOOL-TIME TO THE EMPATHETIC CARTOONING (BRUNETTI, 2011; HORSMAN, 2015) OF MAKING COMICS.
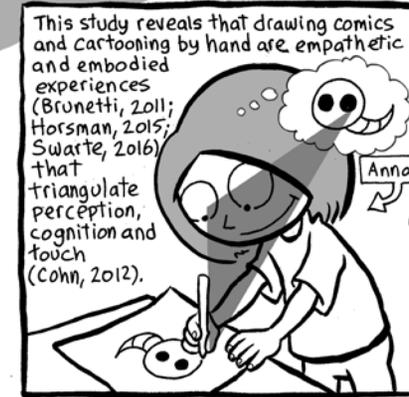
Groensteen (2007) writes, "the practice of comics is, technically and financially speaking, available to everyone" (p. 19). Authorship for students is facilitated by a relative ease of accessibility to the tools of the medium. From these real world and material encounters, Being creates meaning, mediates environment and forms an identity (Bolt, 2007; Greene, 2001; Heidegger, 1962; Irwin & Springgay, 2008; Merleau-Ponty, 2004).

Eraser

Ruler

Pencil

Black felt Pen

A stack of paper

ADDITIONAL MATERIALS FOR COMICS PRODUCTION
-correction fluid
- scissors
- glue stick/tape

There are aspects of ritual when making comics...

Sharpening

Penciling

Inking

INK

Yow

Erasing

In the Fall of 2015 I began a year-long arts-based research study into comics and identity.

What aspects of comics do students want to explore?

In what ways are original cartoon characters manifestations of authorship and identity?

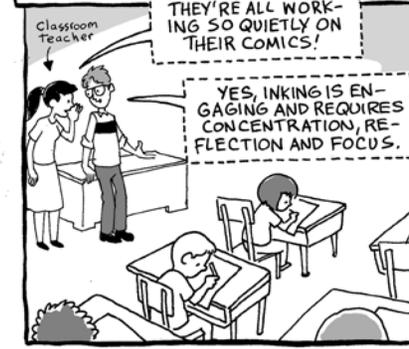How is drawing comics by hand important in helping authors develop a voice?

?

Over the course of two months I taught twenty-five bilingual grade four students in Vancouver BC, Canada how to make comics.

ANALYSIS OF THE HUNDREDS OF PAGES OF STUDENT-GENERATED COMICS AND CARTOONS YIELDS INTERESTING FINDINGS.

This study reveals that drawing comics and cartooning by hand are empathetic and embodied experiences (Brunetti, 2011; Horsman, 2015; Swarte, 2016) that triangulate perception, cognition and touch (Cohn, 2012).

Anna

FOR INSTANCE, ANNA'S THREE CHARACTERS ARE METAPHORIC AVATARS OF HERSELF AND HER FAMILY, WHICH I'LL EXPLAIN LATER...

TTOD THE MONSTER

HAMY THE HAMSTER

JEFF THE ANT
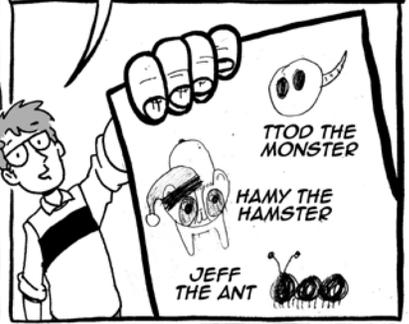
Students appear to unconsciously negotiate conceptions of identity through the fictional cartoon characters they create.

Classroom Teacher

THEY'RE ALL WORKING SO QUIETLY ON THEIR COMICS!

YES, INKING IS ENGAGING AND REQUIRES CONCENTRATION, REFLECTION AND FOCUS.

I interviewed three random participants six times.

IS THERE ANYTHING YOU WOULD CHANGE ABOUT SCHOOL?

YES--MORE ART COURSES AND CREATIVE THINGS.

Note: pseudonyms are employed to maintain anonymity.

Anna (age 9)

UMMM... MORE ART.

I LIKE ART.
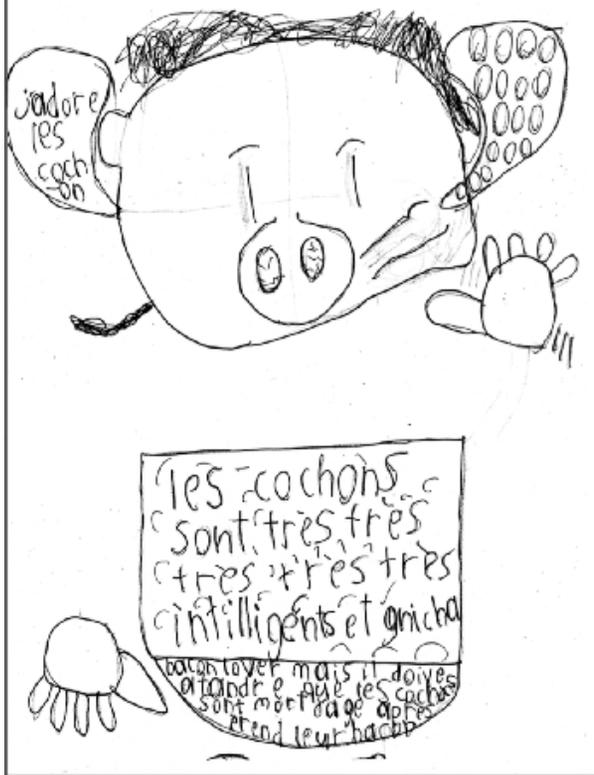
Stella (age 9)

Daniel (age 9)

Case study #1: Daniel

**Figure 1.
Daniel's one-panel gag cartoon.**
Translation:
First speech balloon: "I love pigs."
Second speech balloon: "Oooooooooooooooo."
Caption: Pigs are very, very, very, very, very intelligent and gnicha (sic). Bacon lover but he must wait for the pigs to die of old age and after take their bacon.

The talking pig-nosed character is, according to Daniel, a self-portrait. This is reinforced by the "rat-tail" of hair visibly sticking out from behind the character's head below the speech balloon on the left, a characteristic hair style shared by both Daniel and the character in his drawing. This, I suggest, is a Visual Linking Device (Lim, 2004, 2007) that forges a relationship between the author and his cartoon character. In this way, Daniel negotiates identity by assuming features of the other. The pig-like inhuman says in the first speech balloon, "I love pigs." This is followed by a cry of, "Oooooooooooooooo" in the second speech balloon, which Daniel explains is the character whistling. There is a caption situated where the character's stomach would be, and Daniel writes how very intelligent pigs are. Yet the text assumes a more serious tone when he broaches the subject of eating animals.

In the drawing, Daniel admits to loving bacon and appears to express relief in the somewhat misguided belief that pig meat is not harvested until after the animal dies of old age. In our sixth and last interview, Daniel states, "Si j'étais un fermier et j'avais des cochons je ne l'ai pas tuer (sic) et après prendre leur bacon, parce que si tu fais ça le bacon est plus bon" ["If I were a farmer and I had pigs, I would not kill them and then take their bacon, because if you do that the bacon is no longer any good."] The empathetic connection with the other revealed in both Daniel's cartoon and in our conversation, I suggest, communicates a love and empathy for animals, nature, and the inhuman.
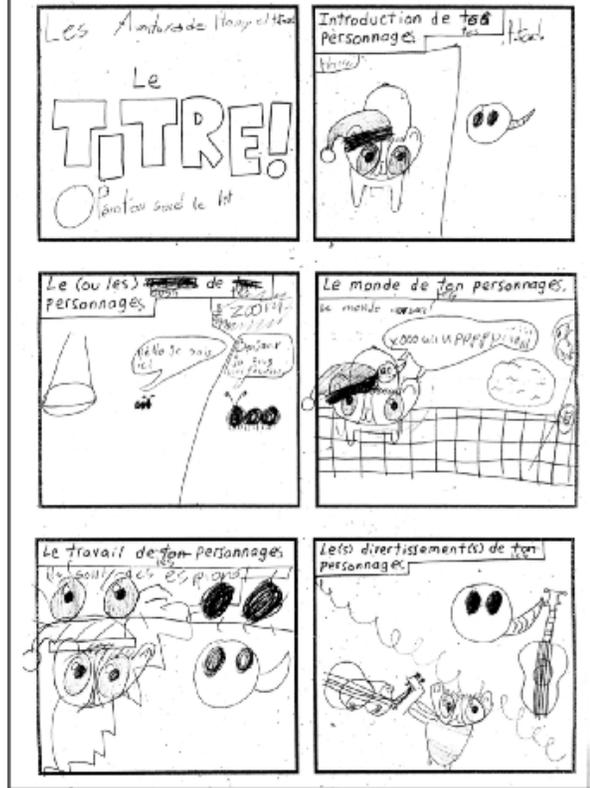
Case study #2: Anna

**Figure 2.
Anna's one-page character introduction.**
Translation:
Panel 1- The Title: The Adventures of Hamy and TTOD - Operation Under the Bed.
Panel 2- Caption: Introduction of your characters. Hamy. TTOD.
Panel 3.1- Caption: The boss of your characters. Jeff: Hey ho. I'm here.
Panel 3.2- Sound Effect: ZOOM. Jeff: Hello. I am an ant.
Panel 4- Caption: The world of your characters. The normal world. Hamy and TTOD: Yippeeee!
Panel 5- What do your characters do for work? They are spies.
Panel 6- What your characters do for fun.

Anna describes Hamy as "vraiment comme dramatique" ["really like dramatic"], and TTOD as "plus calme" ["more calm"]. In terms of her own temperament and relationship with those two characters, Anna says she positions herself "entre le milieu" ["in the middle"]. Employing écriture féminine (Cixous & Clément, 1986) as a lens for analysis opens interesting connections when contextualizing her interview comments with her comics. For instance, Anna situates herself between two main characters who are good friends, which can perhaps be contrasted with her perceptions of living with "deux mères" ["two moms"]. Thus the relationship between Hamy, TTOD, and Jeff suggests perceptual openings into Anna's negotiations of her own identity. I decide to pursue this line of inquiry and organize a sixth and final interview with the three participants almost one year after my classroom visits had ended.

The dynamics between Hamy and TTOD are the polar opposites of each other. For example, in the last panel of Figure 2, TTOD is portrayed playing music on the guitar while simultaneously Hamy, the reader is told, likes to destroy guitars. I suggest the character of Jeff the ant offers Anna metaphoric perspectives into her own experience of living in between two m/others, thus opening opportunities for authorial explorations into social relations. In our final interview together, I ask Anna if her two mothers have different personalities from each other. She replies, "Oui, très différents" ["Yes, very different"]. I continue by asking her, "Alors, est-ce-que tu penses que Hamy représente une mère puis TTOD représente l'autre mère puis Jeff te représente au milieu de ces deux la? ["So, do you think Hamy represents one mother, TTOD represents the other mother, and Jeff represents you in-between these two?"] Without hesitation Anna replies with an enthusiastic "Oui!" ["Yes!"]

Figure 3. Rosette and the Bullying Adventure, page 3.
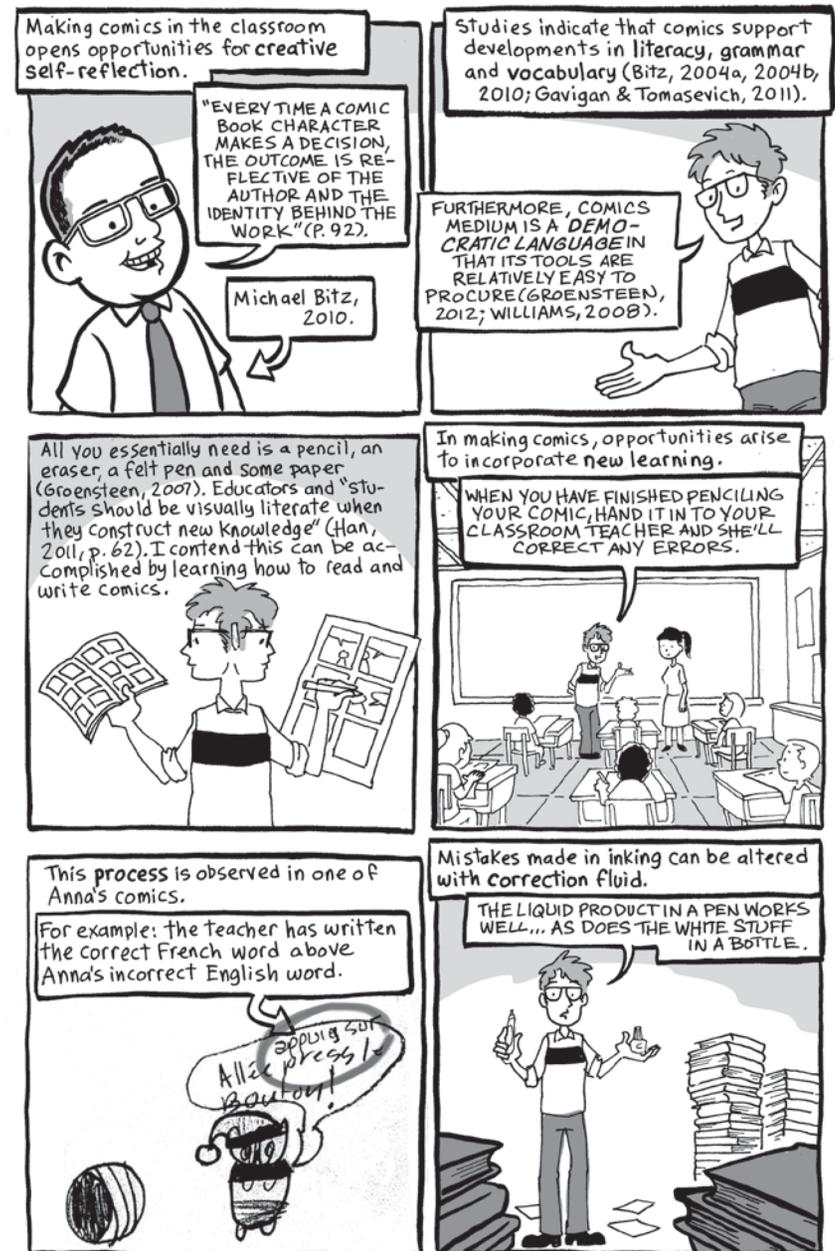Translation:
Panel 1- Rosette: Oh!
Panel 2- Note: "You are really not smart."
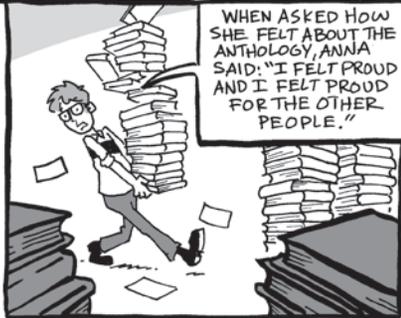**Panel 3-** Rosette (crying): Sniff... sniff...
Panel 4- Rosette: May I go to the washroom? Teacher: But of course.

On page 3 of her six-page story, Stella portrays the moment her character Rosette opens an insulting note tossed at her by two bullies in class. In Panel 2, the point-of-view shifts, thus directing the reader to empathetically and metaphorically become Rosette. The author (Stella, that is) invites the reader to reciprocally share in the experience of narrator-monstrator-reciter (Groensteen, 2007), and thus negotiate identity through the character's perspective. In fact, the author and the reader are sharing the eyes of the character: Rosette's striped sleeves are now the arms of the reader; the hands that grasp the insulting note are also those of the reader; and the eyes reading the note are those of the reader now as well. The reader is Rosette, and Rosette is the reader... an empathetic symbiosis and new indivitrio of author, character, and reader. Stella claims comics authorship by tearing down the fourth wall. In this way she pays attention to the liminal space between writer and reader whereby the author writes "toward the other" (Sellers, 1996, p. 19) and invites the reader into the narrative through a multimodal hybridity of character design, panel composition, non-verbal emotion cues, and camera angles (Groensteen, 2007, 2013; Lim, 2007; Uhls et al., 2014; Williams, 2008).

I asked Stella, in our last interview, "Est-ce que tu voulais que le lecteur pense pour un instant qu'il peut devenir Rosette avec un dessin comme ça? ["Did you want the reader to think for a moment that they can become Rosette with a drawing like this?"] She replied, "J'ai pas trop penser a faire un dessin comme ça" ["I didn't really think too much about doing a drawing like that."] I contend Stella is, in this comic, unconsciously claiming authorship by attending "to the gaps" (Sellers, 1996, p. 16) and communicating vividly with the other.

Making comics in the classroom opens opportunities for creative self-reflection.

"EVERY TIME A COMIC BOOK CHARACTER MAKES A DECISION, THE OUTCOME IS REFLECTIVE OF THE AUTHOR AND THE IDENTITY BEHIND THE WORK" (P. 92).

Michael Bitz, 2010.

Studies indicate that comics support developments in literacy, grammar and vocabulary (Bitz, 2004a, 2004b, 2010; Gavigan & Tomasevich, 2011).

FURTHERMORE, COMICS MEDIUM IS A DEMOCRATIC LANGUAGE IN THAT ITS TOOLS ARE RELATIVELY EASY TO PROCURE (GROENSTEEN, 2012; WILLIAMS, 2008).

All you essentially need is a pencil, an eraser, a felt pen and some paper (Groensteen, 2007). Educators and "students should be visually literate when they construct new knowledge" (Han, 2011, p. 62). I contend this can be accomplished by learning how to read and write comics.

In making comics, opportunities arise to incorporate new learning.

WHEN YOU HAVE FINISHED PENCILING YOUR COMIC, HAND IT IN TO YOUR CLASSROOM TEACHER AND SHE'LL CORRECT ANY ERRORS.

This process is observed in one of Anna's comics.

For example: the teacher has written the correct French word above Anna's incorrect English word.

Mistakes made in inking can be altered with correction fluid.

THE LIQUID PRODUCT IN A PEN WORKS WELL... AS DOES THE WHITE STUFF IN A BOTTLE.

One component to this study was collecting the students' comics to print as an anthology. Each participant received a copy of the collected works.

WHEN ASKED HOW SHE FELT ABOUT THE ANTHOLOGY, ANNA SAID: "I FELT PROUD AND I FELT PROUD FOR THE OTHER PEOPLE."

My personal experience with comics has created understandings into some of the complexities of second language acquisition.

OH--I GET IT NOW-- HIS NAME IS ASTÉRIX BECAUSE IT SOUNDS LIKE ASTERISK!

Me, in grade four.

ASTÉRIX le GAULOIS

Comics helped me learn French, but as a British-Canadian citizen in Quebec, I was looked upon as an other.

FLQ

Parti Québécois

LOI 101
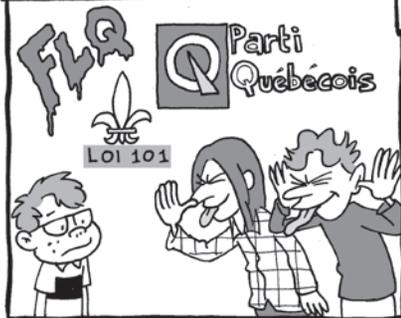
My third language of comics has, in ways similar to my Anglophone experience in Quebec, been vilified and debased by the dominant culture. However, comics scholar Bart Beaty (2012) writes that,

"...THE COMICS WORLD WILL BE ABLE TO OVERCOME THE HISTORICAL BIASES AGAINST COMICS AND LEGITIMATE THEM AS ART" (P.47).

In an interview with Jan Baetens (2013), Beaty says that, "there must be a department of comics studies" (p.181).

This department is slow to materialize due to a "general unfamiliarity with the medium" (Uidhir, 2012, p. 50). Currently, comics is a nomad science (Deleuze & Guattari, 2007) that takes up temporary residence in various departments at the margins of academia.

CO-MIX

YOO HOO!

HEY, COMICS!

I LIKE YOUR FORM, KID!

SOCIOLOGY

A growing divergence between life-world and virtual-world experience signifies conflicting worldviews whereby an intensification of digital technology in schools contributes to the moribund condition of curriculum studies and analog existence.

I believe schools can create a balance between digital and analog opportunity by focusing elementary school students' negotiations onto the physical and material lifeworld.

CHOMP!

CHOMP!

RESEARCHING A CURRICULUM THAT INCORPORATES THE FREEHAND WRITING AND CARTOONING OF THE COMICS MEDIUM IS A UNIQUE APPROACH TO LEVEL THE IMBALANCE.

THIS VISUAL ESSAY EXPLORES SOME OF THE PEDAGOGICAL IMPLICATIONS OF THE TECHNOPOLY. THERE ARE, HOWEVER, SEVERAL OTHER FIELDS IMPACTED BY GROWING TECHNOLOGY. THESE INCLUDE, BUT ARE NOT LIMITED TO, VARIOUS ENVIRONMENTAL AND HEALTH CONCERNS.

References

Apple, M. W. (2005). Education, markets, and an audit culture. *Critical Quarterly, 47*(1-2), 11-29. doi:10.1111/j.0011-1562.2005.00611.x

Baetens, J. (2013). Learning from comics (and Bart Beaty): On the institutionalization of comics. *Interférences Littéraires-Literaire Interferenties, 11*, 179-188.

Beaty, B. (2012). *Comics versus art*. Toronto, ON: University of Toronto Press.

Bindley, K. (2011, December 9). When children text all day, what happens to their social skills? *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/2011/12/09/childrentexting-technology-social-skills_n_1137570.html

Bitz, M. (2004a). The comic book project: Forging alternative pathways to literacy. *Journal of Adolescent & Adult Literacy, 47*(7), 574-586.

Bitz, M. (2004b). The comic book project: The lives of urban youth. *Journal of Adolescent & Adult Literacy, 57*(2), 33-39.

Bitz, M. (2009). *Manga high*. Cambridge, MA: Harvard Education Press.

Bitz, M. (2010). *When commas meet kryptonite: Classroom lessons from the comic book project*. New York, NY: Teachers College Press.

Bolt, B. (2007). The magic is in handling. In E. Barrett & B. Bolt (Eds.), *Practice as research: Approaches to creative arts enquiry* (pp. 27-34). New York, NY: I.B. Tauris.

Brunetti, I. (2011). *Cartooning: Philosophy and practice*. New Haven, CT: Yale University Press.

Cixous, H., & Clément, C. (1986). *The newly born woman*. Minneapolis, MN: University of Minnesota Press.

Clark, T. F., Winkielman, P., & McIntosh, D. N. (2008). Autism and the extraction of emotion from briefly presented facial expressions: Stumbling at the first step of empathy. *Emotion, 8*(6), 803-809. doi:10.1037/a0014124

Cohn, N. (2012). Explaining 'I can't draw': Parallels between the structure and development of language and drawing. *Human Development, 55*(4), 167-192. doi:10.1159/000341842

Collins, J., & Blot, R. K. (2003). *Literacy and literacies: Texts, power, and identity*. Cambridge, UK: Cambridge University Press.

Corneliussen, H. G., & Prøitz, L. (2016). Kids code in a rural village in Norway: Could code clubs be a new arena for increasing girls' digital interest and competence? *Information, Communication & Society, 19*(1), 95-110.

Deleuze, G., & Guattari, F. (1987). *Capitalism and schizophrenia*. London/New York: Continuum.

Gavigan, K. W., & Tomasevich, M. (2011). *Connecting comics to curriculum: Strategies for grades 6-12*. Santa Barbara, CA: Libraries Unlimited.

Giedd, J. N. (2012). The digital revolution and adolescent brain evolution. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 51*(2), 101. doi:10.1016/j.jadohealth.2012.06.002

Giroux, H. A. (1999). *The mouse that roared: Disney and the end of innocence*. Lanham, MD: Rowman & Littlefield.

Giroux, H. A. (2010). Challenging the military-industrial-academic complex after 9/11. *Policy Futures in Education, 8*(2), 232-237.

Giroux, H. A. (2015). *The university in chains: Confronting the military-industrial-academic complex*. Boulder, CO: Paradigm Publishers. doi:10.4324/9781315631363

Government of Canada. (2017) *Budget 2017*. Retrieved from http://www.budget.gc.ca/2017/docs/plan/chap-01-en.html

Greene, M. (2001). *Variations on a blue guitar: The Lincoln Center Institute lectures on aesthetic education*. New York, NY: Teachers College Press.

Groensteen, T. (2007). *The system of comics*. Jackson, MI: University Press of Mississippi.

Groensteen, T. (2012). The current state of French comics theory. *Scandinavian Journal of Comic Art, 1*(1), 112-122.

Han, S. (2011). Education, semiotics, and the virtual world of Second Life. *The International Journal of Arts Education, 9*(2), 53-73.

Hancock, S. (2009). *The child that haunts us: Symbols and images in fairytale and miniature literature*. New York, NY: Routledge. doi:10.4324/9781315787503

Harris, M. (2014). *The end of absence: Reclaiming what we've lost in a world of constant connection*. New York, NY: Current.

Heidegger, M. (1962). *Being and time* (7th ed.). New York, NY: Harper & Row.

Herzog, W. (Producer & Director). (2016). *Lo and behold* [Motion Picture]. United States: Netscout.

Hickey-Moody, A. (2013). *Youth, arts and education: Reassembling subjectivity through affect*. New York, NY: Routledge. doi:10.4324/9780203855829

Horsman, Y. (2015). The rise of comic studies. *Oxford Art Journal, 38*(1), 148-152. doi:10.1093/oxartj/kcu035

Huebner, D. E., Pinar, W. F., & Hillis, V. (1999). *The lure of the transcendent: Collected essays by Dwayne E. Huebner*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ingold, T. (2013). *Making: Anthropology, archaeology, art and architecture*. New York, NY: Routledge.

Irwin, R. L., & Springgay, S. (2008). A/r/tography as practice-based research. In S.

Springgay, R. L. Irwin, C. Leggo, & P. Gouzouasis (Eds.), *Being with a/r/tography* (pp. xix-xxxiii). Rotterdam: Sense.

Jung, C. G., & Franz, M. V. (1964). *Man and his symbols*. Garden City, NY: Doubleday.

Kanu, Y., & Glor, M. (2012). "Currere" to the rescue? Teachers as "amateur intellectuals" in a knowledge society. In S. Gibson (Ed.), *Canadian Curriculum Studies* (pp. 11-28). Vancouver, BC: Pacific Educational Press.

Keen, A. (2015). *The internet is not the answer*. New York, NY: Atlantic Monthly Press.

Keraroudi, M. L., Shalmani, H. B., & Pourmohammadi, M. (2016). On the effect of digital games on Iranian primary school students' vocabulary retention. *Modern Journal of Language Teaching Methods, 6*(4), 132-139.

Kraver, J. (2013). Reinventing the composition classroom, or how making comics can clarify the composing process. *SANE journal: Sequential Art Narrative in Education, 1*(3), 29-46.

Lim, F. V. (2004). Developing an integrative multi-semiotic model. In K. O'Halloran (Ed.), *Open linguistics: Multimodal discourse analysis: Systemic functional perspectives* (pp. 220-246). London, UK: Continuum.

Lim, F. V. (2007). The visual semantics stratum: Making meaning in sequential images. In T. D. Royce & W. L. Bowcher (Eds.), *New directions in the analysis of multimodal discourse* (pp. 195-212). Mahwah, NJ: Lawrence Erlbaum.

Ma, S. (1997). Mourning with the (as a) jew: Metaphor, ethnicity, and the holocaust in Art Spiegelman's *Maus. Studies in American Jewish Literature (1981-), 16*, 115-129.

Marcuse, H. (1964). *One-dimensional man: Studies in the ideology of advanced industrial society*. Boston, MA: Beacon Press.

Merleau-Ponty, M. (2004). *The world of perception* (1st ed.). New York, NY: Routledge. doi:10.4324/9780203491829

National Research Council. (2011). *Successful k-12 STEM education: Identifying effective approaches in science, technology, engineering, and mathematics*. Committee on Highly Successful Science Programs for K-12 Science Education. Board on Science Education and Board on Testing and Assessment, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Noddings, N. (2007). Curriculum for the 21st Century. *Educational Studies in Japan: International Yearbook, 2*, 75-81.

Orey, M., Jones, S. A., & Branch, R. M. (2012). *Educational media and technology yearbook* (Vol. 37). New York, NY: Springer.

Postman, N. (1992). *Technopoly: The surrender of culture to technology*. New York, NY: Knopf.

Scripp, L., & Paradis, L. (2014). Embracing the burden of proof: New strategies for determining predictive links between arts integration teacher professional development, student arts learning, and student academic achievement outcomes. *Journal for Learning through the Arts, 10*(1), 1-18.

Sellers, S. (1996). *Hélène Cixous: Authorship, autobiography, and love*. Cambridge, MA: Polity Press.

Shaw, R., & Shaw, G. (2016, January 19). B.C. schoolchildren soon to be taught computer coding. *Vancouver Sun*. Retrieved from http://www.vancouversun.com/business/schoolchildren+soon+taught+computer+coding/11660562/story.html?__lsa=e7e1-4e15

Snaza, N. (2014). The death of curriculum studies and its ghosts. *Journal of Curriculum and Pedagogy, 11*(2), 154-173. doi:10.1080/15505170.2014.966932

Swarte, J. (2016, June 8). *Drawing as language* [Video file]. Retrieved from https://www.youtube.com/watch?v=Cc_qobtOH94

Szalavitz, M. (2010, May 28). Shocker: Empathy drops 40% in college students since 2000. *Psychology Today*. Retrieved from https://www.psychologytoday.com/blog/born-love/201005/shocker-empathy-dropped-40-in-college-students-2000

Taylor, J. (2014). From 'or' to 'and': L'écriture féminine as a methodological approach for fine art research. *Arts and Humanities in Higher Education, 13*(3), 303-311. doi:10.1177/1474022213514554

Uhls, Y. T., Michikyan, M., Morris, J., Garcia, D., Small, G. W., Zgourou, E., & Greenfield, P. M. (2014). Five days at outdoor education camp without screens improves preteen skills with nonverbal emotion cues. *Computers in Human Behavior, 39*, 387-392. doi:10.1016/j.chb.2014.05.036

Uidhir, C. M. (2012). Comics and collective authorship. In A. Meskin, & R. T. Cook (Eds.), *The art of comics: A philosophical approach* (pp. 47-67). Chichester: John Wiley & Sons.

Williams, R. M. (2008). Image, text, and story: Comics and graphic novels in the classroom. *Art Education, 61*(6), 13-19.

Zaki, J., Bolger, N., & Ochsner, K. (2009). Unpacking the informational bases of empathic accuracy. *Emotion, 9*(4), 478-487. doi:10.1037/a0016551