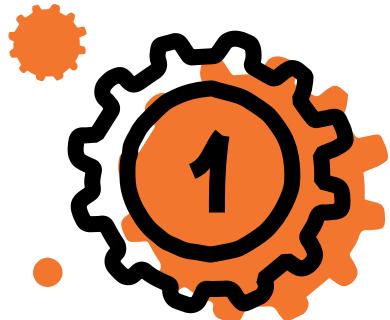




Infographics and Knowledge Translation

Samantha Chan & Tracy Fabri

Outline



About Infographics

A brief introduction & history



Infographics for Knowledge Translation

How they are used for KT

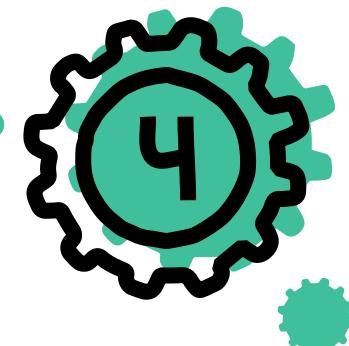


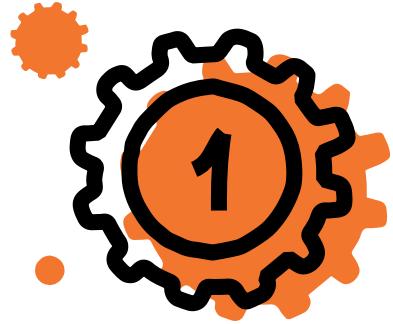
Impact and Usability of Infographics

A proposed study

Resources

Links to useful references and guides

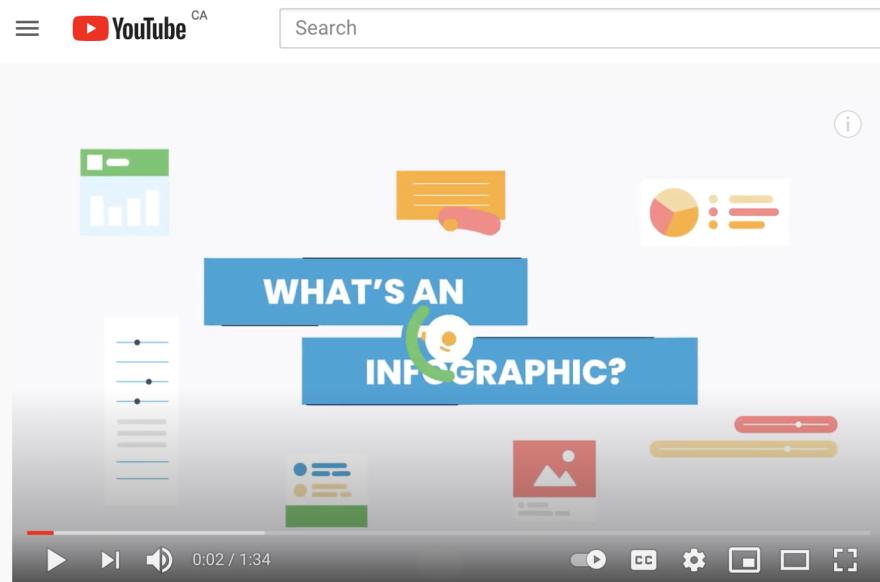




Part I

A brief introduction and history

What's an infographic?



#infographics #infographictemplates #graphicdesign

What is an Infographic + Downloadable Templates

27,282 views • Sep 6, 2020

266

22

SHARE

SAVE

...



Easelly: Infographic Design Tips & Tutorials

SUBSCRIBE

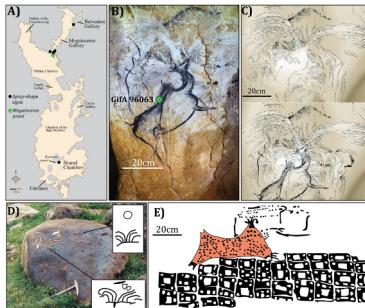
<https://www.youtube.com/watch?v=Yvo-mHq1ojU>

History of infographics

Chauvet-Pont d'Arc Cave in France

Spray-shaped images found at the Chauvet-Pont d'Arc Cave in France were thought to depict the nearby volcanoes that erupted and expelled lava into the sky.

37,000 BC



1764: Joseph Priestly's "Chart of Biography"

Illustrated the lives of ~2,000 historical figures on a timeline.

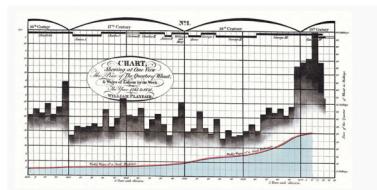
Two decades later...

18th Century

Serra Da Capivara in Brazil

Rock art specialists propose that the rock art of Serra Da Capivara in Brazil, dating as far back as 36,000 years ago, are the origins of infographics.

Playfair; Minard; Beck



Source: Edward Tufte, *The Visual Display of Quantitative Information*, Graphics Press USA, 2001, 2e éd. (1re éd. 1983), 190 p.

History of infographics continued...

The Birth of Data-Based Social Science

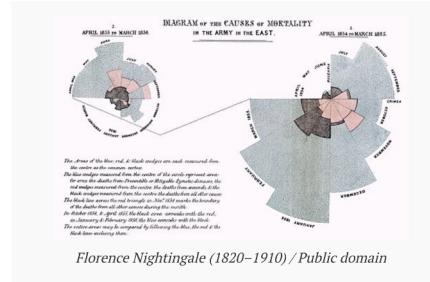
1830'

s

André-Michel Guerry

Illustrated maps showing moral statistics with Venetian geographer, Adriano Balbi.

Florence Nightingale



Florence Nightingale (1820–1910) / Public domain

Minard

Creates the map of Napoleon Bonaparte's 1812 Russian campaign

1857

1859

History of infographics continued...

1920s



TEAM ISOTYPE : Otto Neurath, Marie Neurath and Gerd Arntz

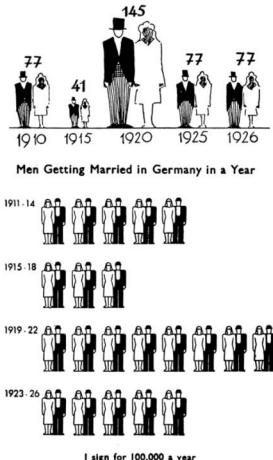
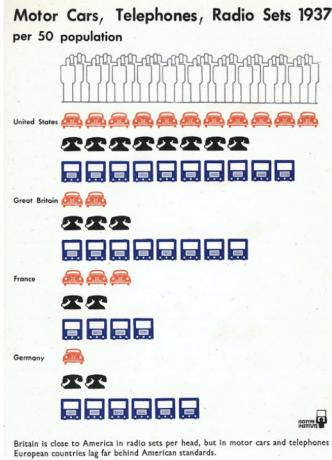


Fig. 2. Both of these example visualizations were made by Otto Neurath, a proponent of using arrays of simple pictographs to present quantitative information. The left image – published in 1937 – uses rows of pictographs to visualize the number of cars, phones, and radios in different countries. The right image – published in 1936 – shows two visualizations of the same data. Neurath insisted that stretching one pictograph (top) was inferior to stacking multiple small pictographs (bottom) [21].

Haroz; Kosara, & Franconeri, 2015;
http://www.designhistory.org/Symbols_pages/isotype.html

History of infographics continued...

Harry Beck

Made the first map of the London Tube

*A milestone in infographic history as it proved that visual diagrams could be used for daily life.

1933

1972

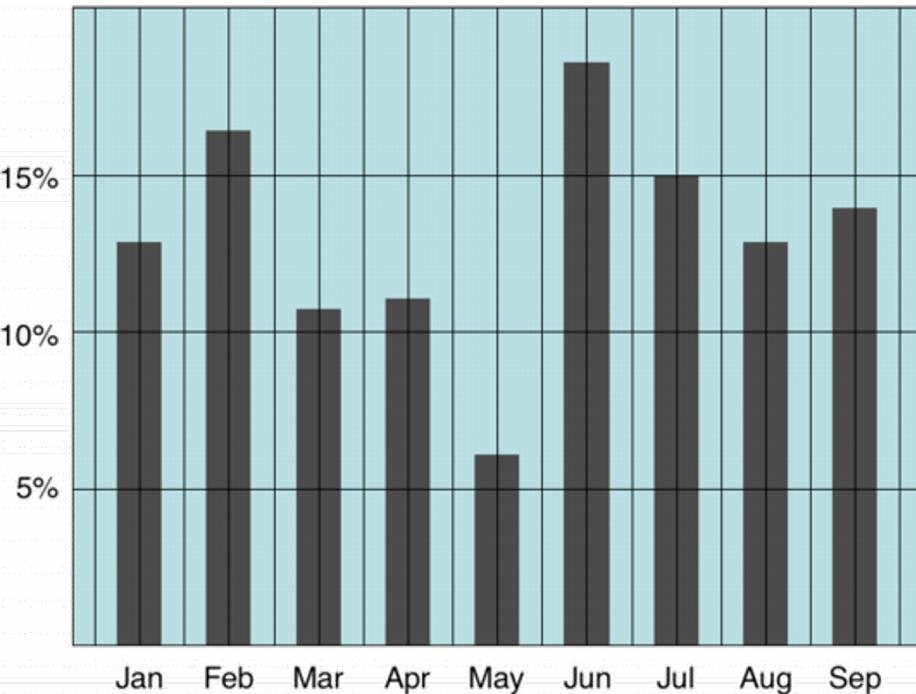
Otl Aicher



Pictograms adopted to those of the Olympic Games 1972 in Munich, Germany symbolizing Curling, Figure Skating and Ice Hockey. Drawn by Otl Aicher, on Display at the Olympic Ice Rink

Tufte VS Holmes

1975... +



The ultralight equation

SCIENTIFIC PROOF THAT TRIMMING OUNCES GIVES YOU LONGER DAYS AND STRONGER LEGS

GRAPHIC BY NIGEL HOLMES, RESEARCHED BY GINA DEMILLO

1

HIKE FARTHER

For every 5 pounds you take off your back, you burn 4% fewer calories in an 8-hour hiking day. That means for an average backpacker burning 500–700 calories an hour...

...if you take 5 pounds out of your pack (trade your tent for a tarp), you can hike about 20 minutes longer without running out of steam.

...lose 10 pounds and you'll hike 40 minutes to an hour longer. Also, with 25 pounds less on your back, you'll use about 25% less food per day.* On a 5-day trip,

...lose 25 pounds and you can extend your hiking day by 2 hours or more. Also, with 25 pounds less on your back, you'll use about 25% less food per day.* On a 5-day trip, you'll lighten your food and fuel weight by 2 pounds.



2

SEE MORE

With more hours to hike, you'll see more wilderness than ever before and still have energy left over.



A 180-pound person carrying a 25-pound pack uses about 20% more energy than a 180-pound person carries a 50-pound pack. The person with the 25-pound pack will have extra energy at the end of the day to cook a gourmet dinner, climb a ridge to see the sunset, and watch for wildlife.

3

FEEL ENERGETIC

Eat a few handfuls of gorp (raisins, M&Ms and peanuts) and then hike.



With a 45-pound load, this snack will give you energy for about an hour's hike...

...but with a 25-pound load, the same snack will give you energy to hike more than 3 hours.

25 pounds less in your pack equals an extra 3 hours.

4

SAVE YOUR KNEES

Studies show that backpacking for 8 hours on uneven terrain can put more than 250 tons of pressure on your knees. Lighten your pack by 10 pounds or more, and you can reduce that strain by half.

5

PROTECT YOUR BACK

The more weight on your back, the more you stoop as you hike. For every 5° you tilt your neck and lean forward, you put an additional 10 pounds of stress on the disks in your back, increasing your chances of back and knee injuries.

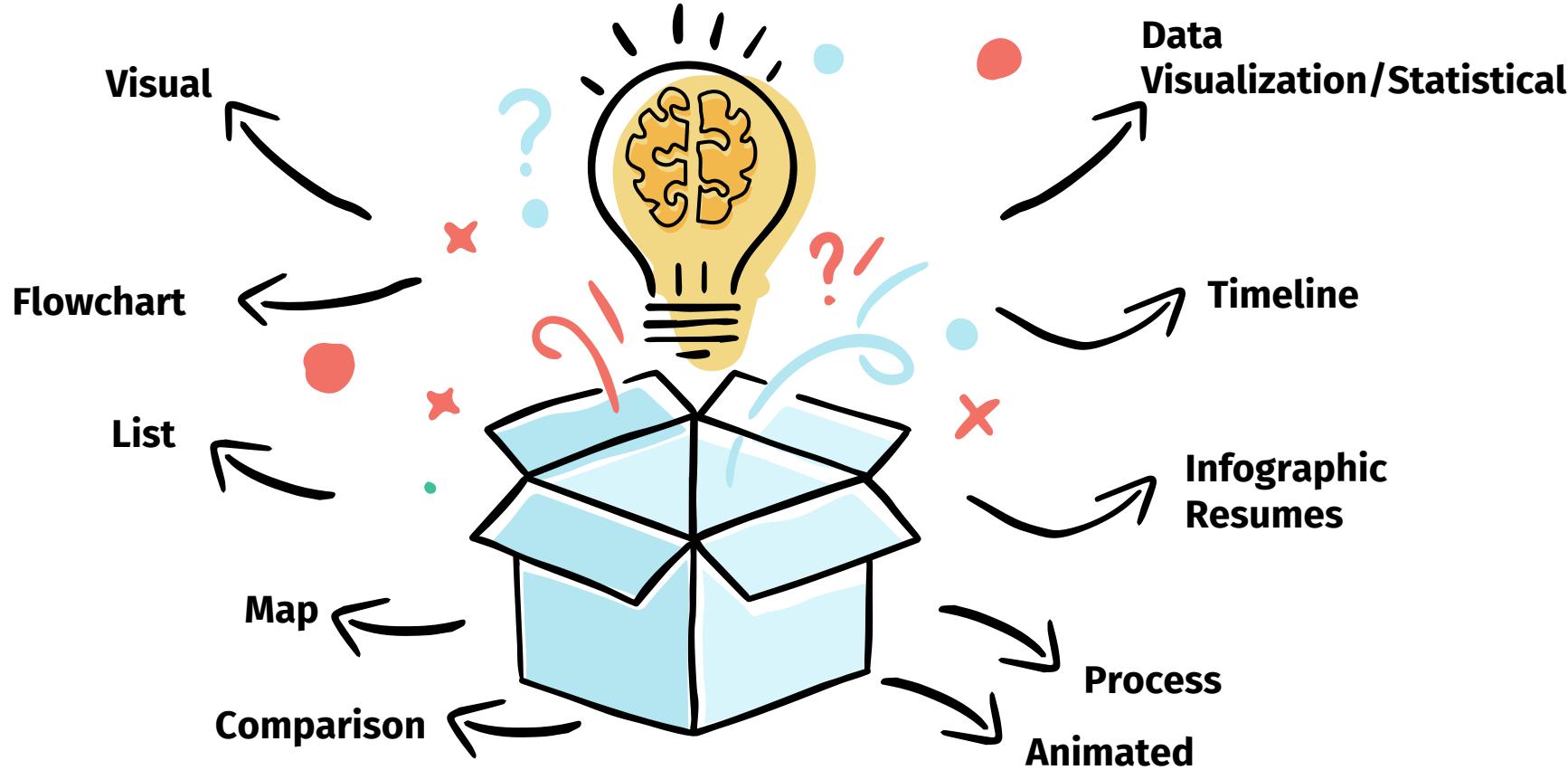


5 pounds less in your pack equals 20 minutes more hiking.

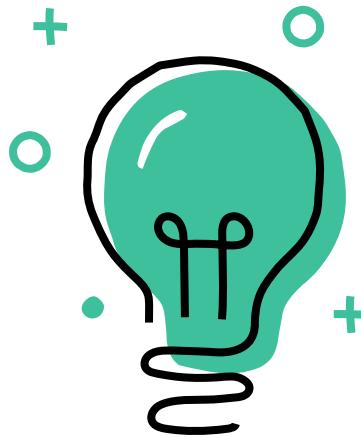
* Based on a 3,000-calorie/day diet, and the estimate that 1 oz food = 104 calories.

Types of infographics

<https://www.youtube.com/watch?v=jGURTUQMp3g&t=38s>



What makes an effective infographic?



**Informational
honesty**

**Complexity of
content**

**Consideration
of illustrations**

**What does it
need?**

Easy to read fonts,
Limited colour
palette, simple
illustrations

Choose simple
illustrations

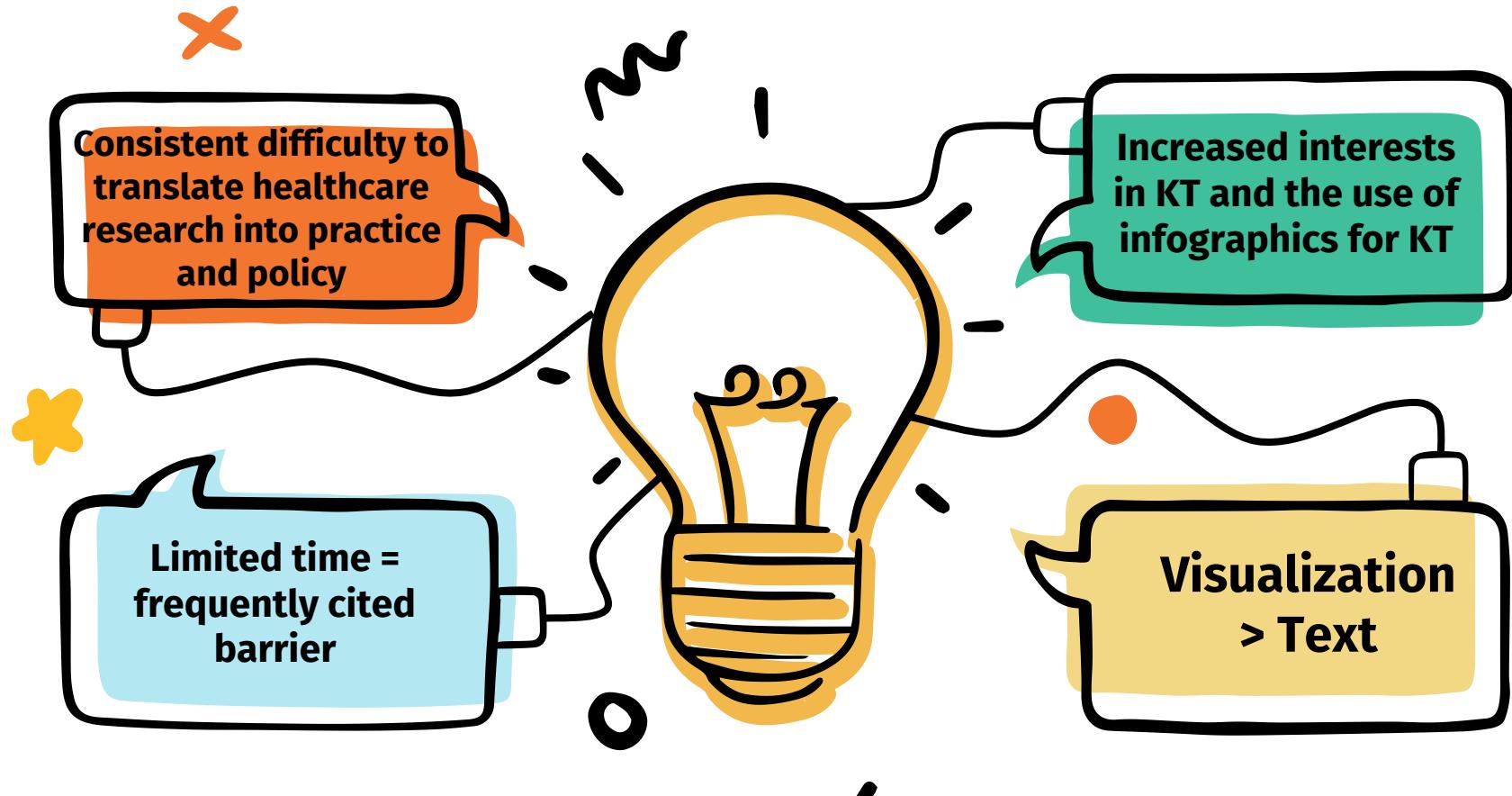
Will interactive
elements be helpful
or distracting?



Part III

Infographics for knowledge translation

Infographics for knowledge translation (KT)

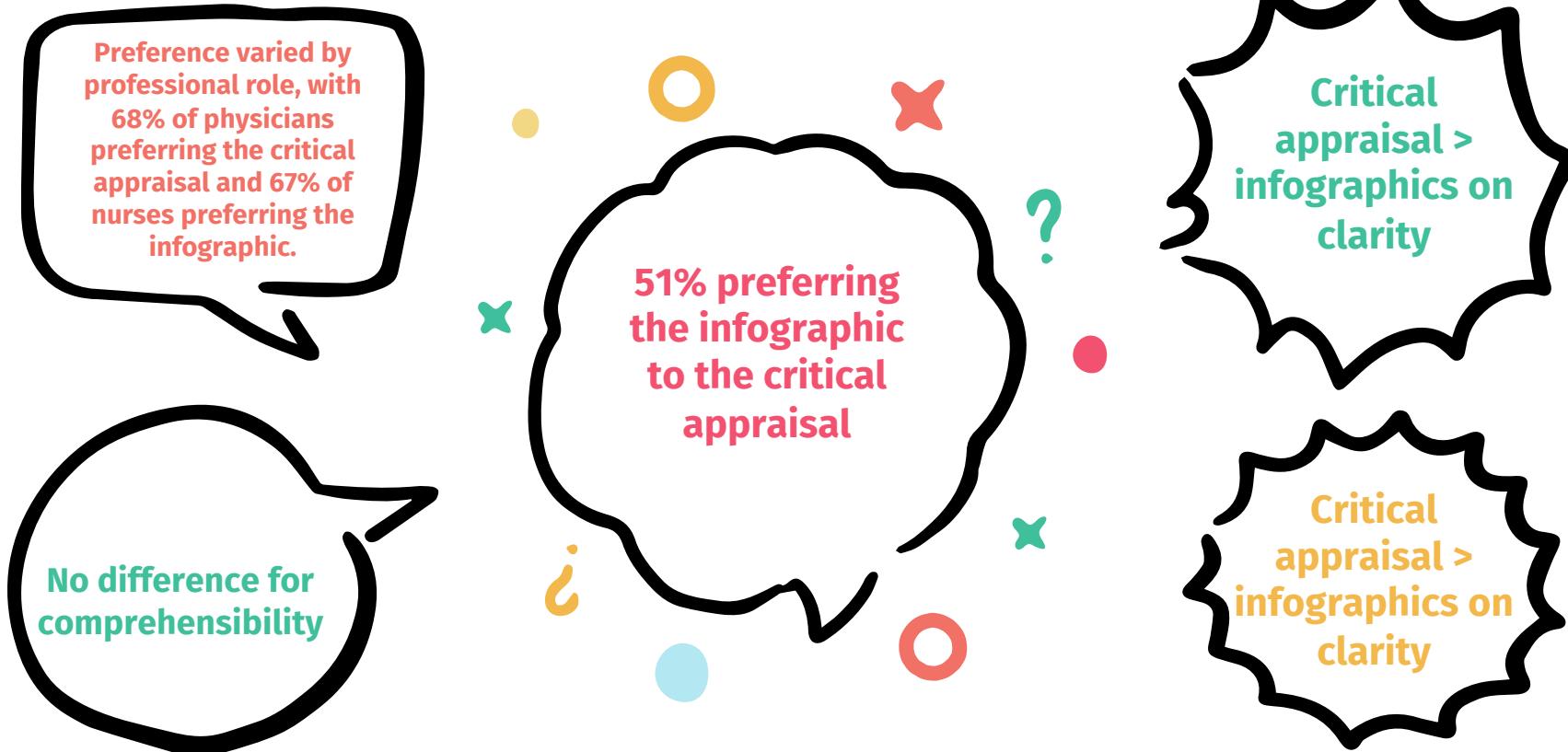


Infographics VS Critical Appraisals



Critically Appraised Topic (CAT): What drugs are effective and tolerable for treating acute migraine headaches in children and adolescents?	
Title	Drugs for treating acute migraine headaches in children and adolescents
Reviewed by	Tariq Alshawabkeh, MD
Date of review	August 2013
Question	In children and adolescents under the age of 17 with acute migraine headaches, what drugs are effective and tolerable for treating acute migraine headaches in children and adolescents?
Clinical bottom line	The primary use of ibuprofen is justified based on safety and efficacy, with triptans as a suitable choice for those in whom ibuprofen has failed.
	Supporting information: These results are based on a meta-analysis of 25 randomised controlled clinical trials. Ibuprofen is a safe and effective treatment for acute migraine in children and adolescents. Acetaminophen is often used to treat acute migraine in adults, but there is insufficient evidence in one pediatric study. There is no significant difference in efficacy between acetaminophen and ibuprofen based on one small study.
	Triptans as a class are also effective in the treatment of acute migraine in children and adolescents (with higher response mainly in children <12 years of age), irrespective of the route of delivery (i.e. oral or intranasal). The rate of adverse events is higher with triptans although all are considered minor (e.g. fatigue, dizziness, low energy, taste disturbances, nasal symptoms, nausea or vomiting). The choice of triptan medication may be guided by patient preference, route of delivery, palatability, and familial experience. Sumatriptan may be a reasonable first choice but is not approved for use in pediatrics in some jurisdictions. Other choices are almotriptan or rizatriptan or intranasal sumatriptan and zolmitriptan.
Search strategy	Nine electronic databases were systematically searched from inception to April 29, 2013: OvidSP MEDLINE, Ovid MEDLINE In Process & Other Non-Indexed Citations, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, Database of Reviews and Abstracts, EBSCOhost International Pharmaceutical Abstracts, PsycINFO, and EBSCOhost CINAHL.
Citation	Richer et al. Drugs for treating acute migraine headaches in children and adolescents. Cochrane Database of Systematic Reviews 2005, Issue 2. Art. No.: CD000520.
Critical appraisal	<p>Population: Children and adolescents under the age of 17 with acute migraine headaches.</p> <p>Interventions: Acetaminophen or ibuprofen vs. placebo (2 studies, cross-over and parallel), dihydroergotamine vs. placebo (1 small cross-over study) and triptans vs. placebo (22 studies, cross-over and parallel).</p> <p>Outcomes: Pain-free at 2 hours, headache relief at 2 hours, and adverse events</p> <p>Design: Systematic review of randomized clinical controlled trials</p> <p>The systematic review controlled for publication and selection bias to identify all relevant studies for the review. In addition, the a priori protocol and the methods of relevance, inclusion, and quality assessment were independent and valid. Finally, data extraction was verified and the data were pooled appropriately.</p>
The evidence	Ibuprofen was superior to placebo for both the pain-free outcome (RR 1.98, 95% CI 1.30 to 2.95, $I^2=0\%$) and headache relief (RR 1.54, 95% CI 1.15 to 2.01, $I^2=0\%$) at 2 hours.
	Triptans as a class were superior to placebo for both the pain-free outcome (RR 1.35, 95% CI 1.20 to 1.51, $I^2=36\%$) and headache relief (RR 1.14, 95% CI 1.05 to 1.25, $I^2=66\%$) at 2 hours.
	Sumatriptan is the reference drug in the triptan class and most frequently studied. The other individual triptan medications were not significantly superior or inferior to sumatriptan.
	Minor adverse events were reported more commonly with triptans compared with placebo.
	The pooled analysis of placebo response rates was 21% (95% CI 18 - 25%) for the pain-free outcome and 48% (95% CI 44% - 53%) for headache relief.

Preferences of knowledge users for two formats of summarizing results from systematic reviews



Knowledge translation of research findings

1. What should be transferred?



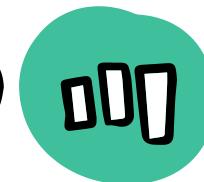
2. To whom should research knowledge be transferred?



3. By whom should research knowledge be transferred?



4. How should research knowledge be transferred?



5. With what effect should research knowledge be transferred?

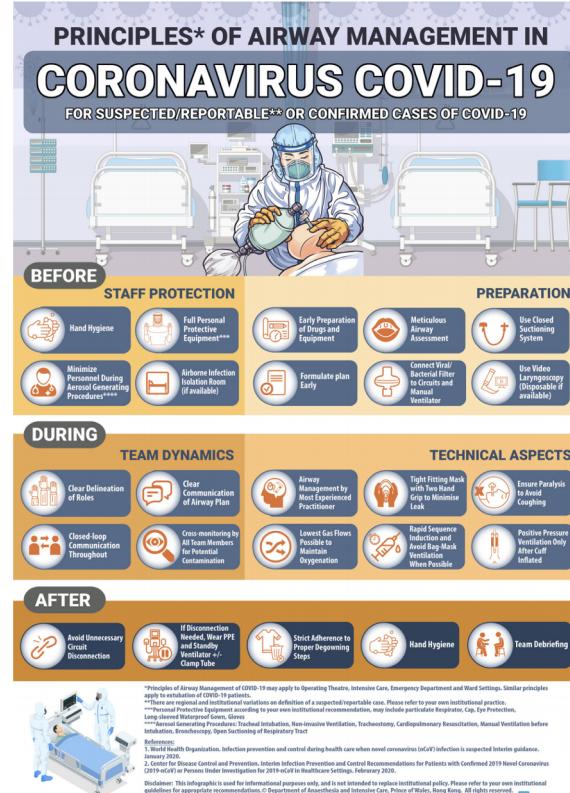


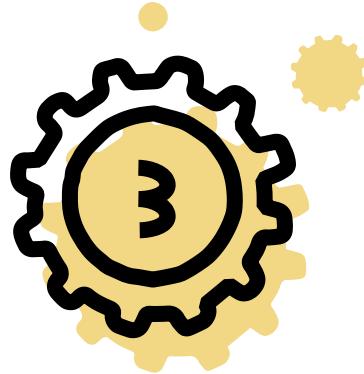
Infographics and Social Media as a KT Strategy

Social media for rapid knowledge dissemination: early experience from the COVID-19 pandemic

A. K. M. Chan,¹ C. P. Nickson,² J. W. Rudolph,³ A. Lee⁴ and G. M. Joynt⁴

- Infographics disseminated via social media, including Twitter and WeChat and the departmental website
- Infographics were translated into 13 different languages within 10 days
- 63,440 interactions with the infographics on Twitter over a month
- Adopted by numerous reputable organizations

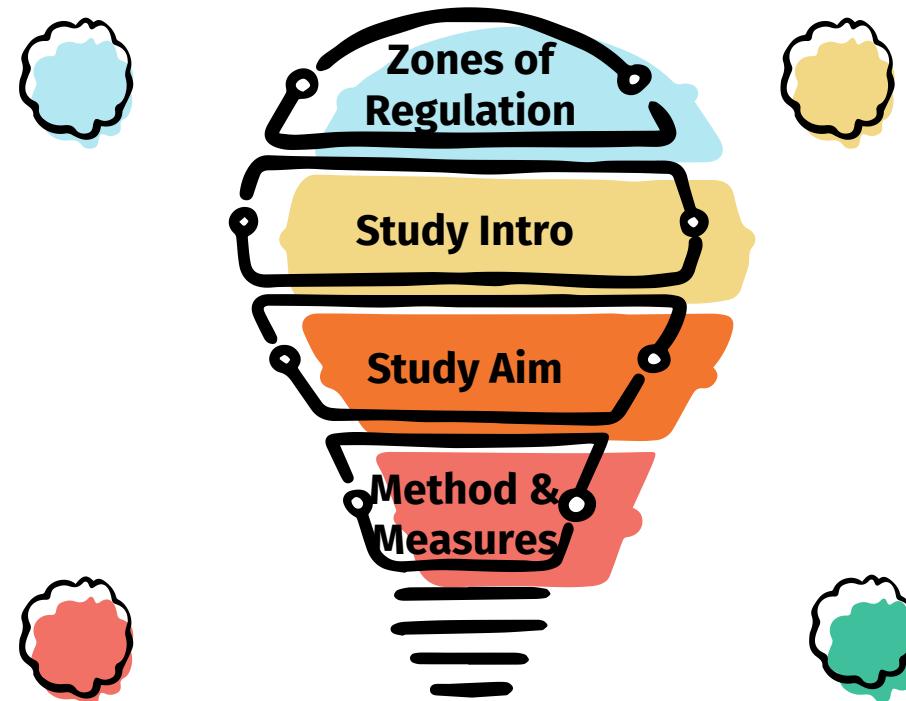




Part III

Impact and usability of infographics

Impact and usability of infographics amongst teachers introduced to the *Zones of Regulation* program



The **ZONES** of Regulation®

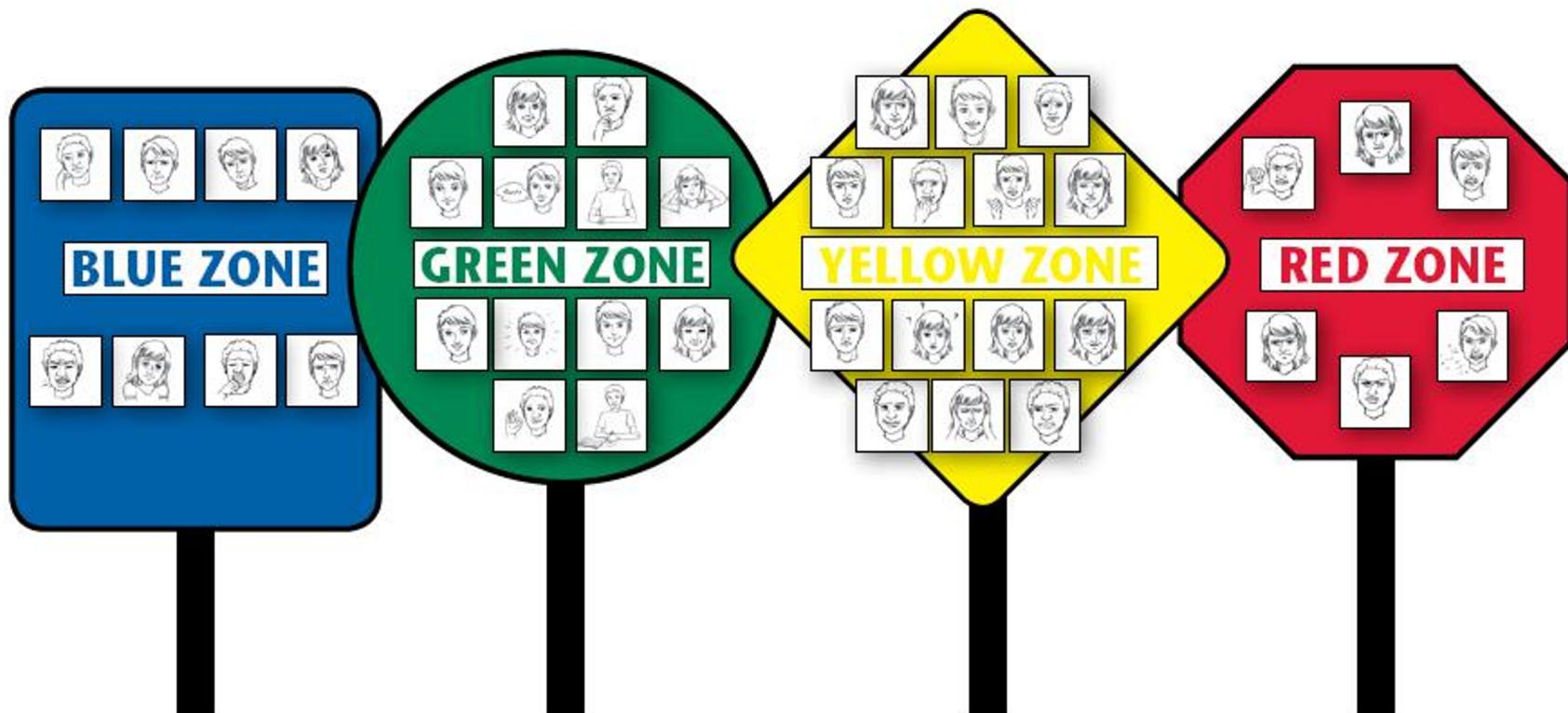
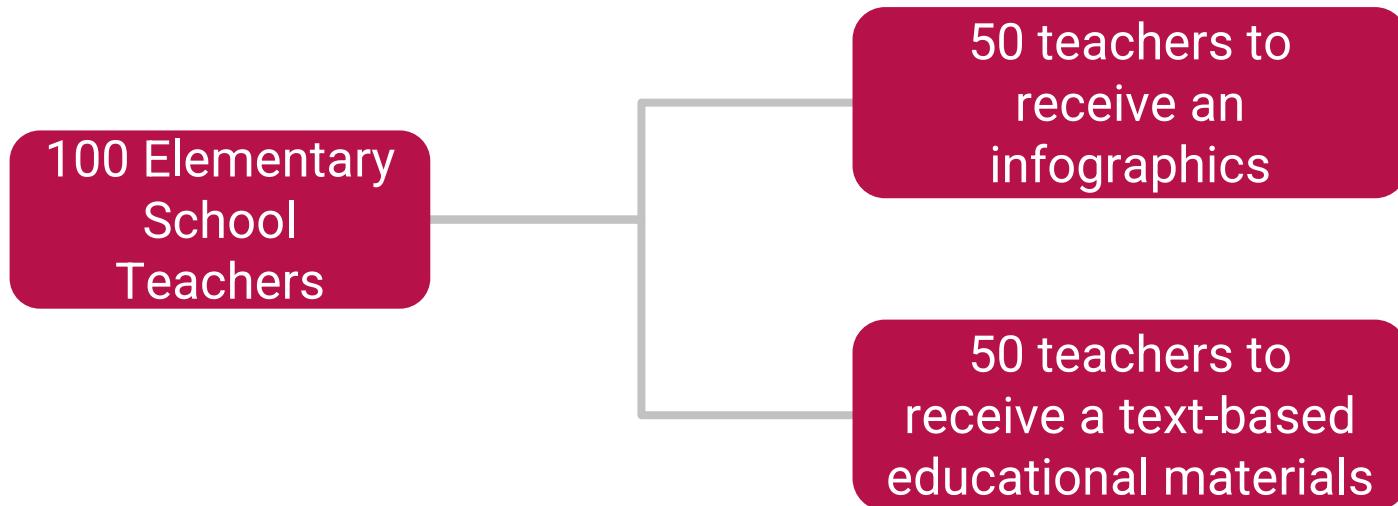


Figure 2: Wall Posters of the Zones

Introduction & Study Aim

- Aim: to examine the *impact* and *usability* of infographics relative to text-based educational materials in promoting teachers' knowledge and confidence in the *Zones of Regulation* program.



Method & Measures

Impact

Survey: Understanding of emotion regulation difficulties among children and the Zones of Regulation program, confidence in using the program in the classroom

ANOVA

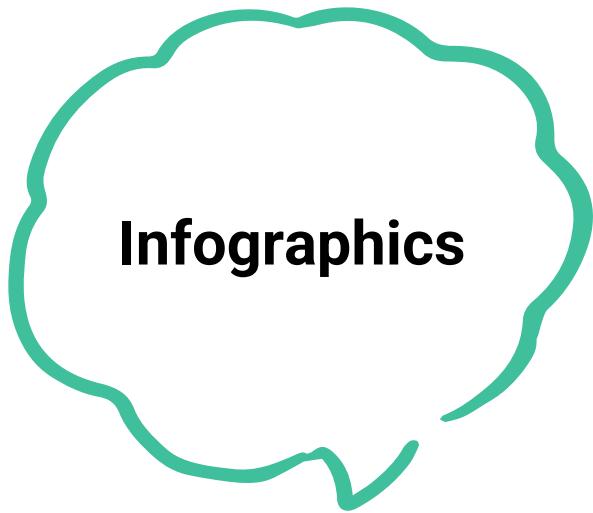
Impact & Useability

Useability

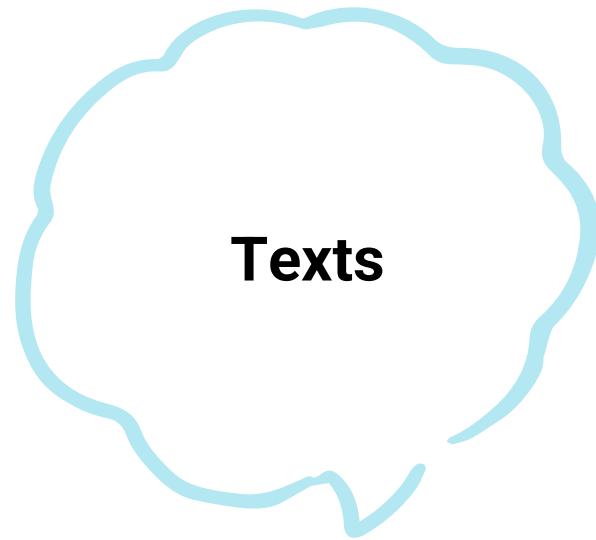
Qualitative interviews: How easy the information is to understand, time it took to understand the material, content and format of the materials

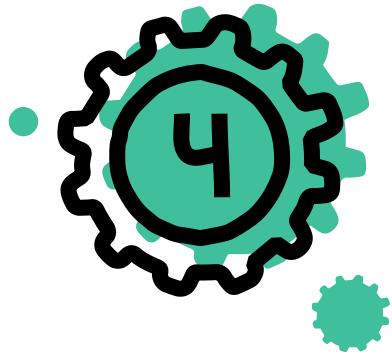
NVivo thematic analysis

Expected Outcomes and Impact



>





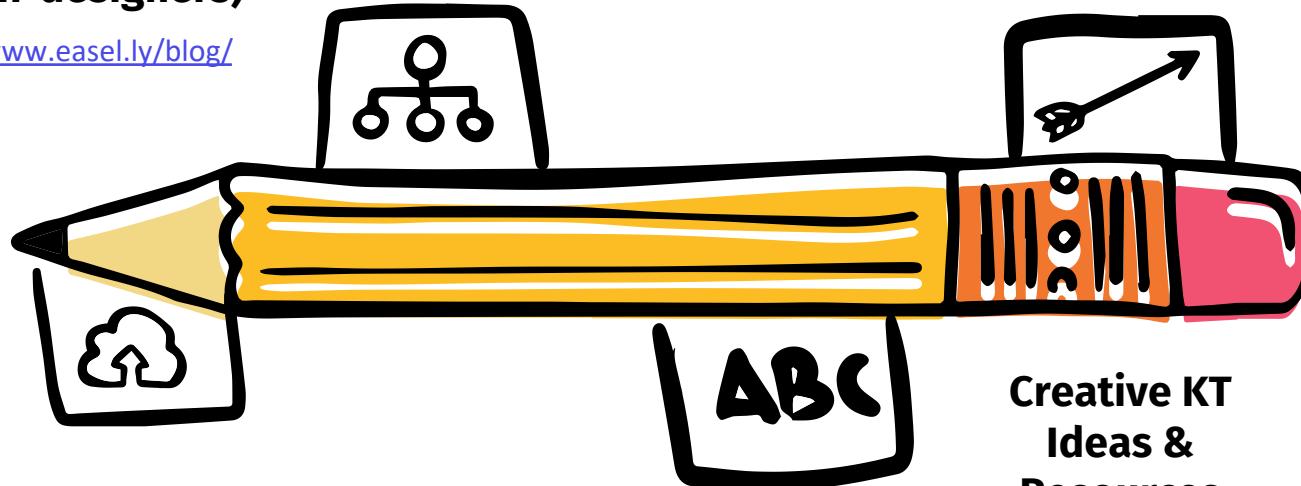
Part IV

Resources

Helpful links and resources

**Making infographics
(for non-designers)**

<https://www.easel.ly/blog/>



**Creative KT
Ideas &
Resources**

<https://ktpathways.ca/system/files/resources/2019-02/if-resources-creative-kt.pdf>

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Thank you!