

# Every Picture Tells a Story: Using Infographics for Discussion Preparation

Paul McEntee

## ABSTRACT

This paper reflects upon a pilot study conducted into the use of infographics (data/content visualization) during different key stages of an English discussion class and how this may have better enabled the students to interpret information and thus discuss more meaningfully. This study takes place in an English discussion course, in which the students are required to prepare for the lesson's discussion topic by reading a two to three-page text. This pilot study, conducted over one semester, sought to consider and evaluate the effectiveness of information presented more 'visually' by using infographics, moreover than through a large body of text. The basic findings were that the students would much prefer a blend of visual and textual preparatory tasks and also that they were most favourable to using infographics as a pre discussion task rather than part of any homework activity.

## INTRODUCTION

Despite the wealth of research that is available to educators on the use of technology as a teaching aid, there certainly does seem to be a paucity of academic inquiry into using *infographics*, a visual representation of data, as a means of illustrating information in an ESL classroom. In that sense, I propose there are ample opportunities, within the context of a discussion course, to further carefully consider a pedagogical approach that incorporates and draws upon visuals. This paper does not intend to overly explore familiar literature on tried and tested guiding principles and cognitive approaches to SLA, I will highlight two theoretical tools which informed this paper and consider works of a similar viewpoint to assess the potential for further research. Underpinning this study is the inquiry into the visual literacy amongst our 'digital native' cohort of students. Research undertaken by the Social Science Research Network has suggested that a figure of 65% of the world's population are indeed visual learners, that is to say people that associate information with images (McCue, 2013). That brings about the question, what are the benefits of using infographics in class? The hypothesis more concretely can be framed as 'As we are increasingly surrounded with visual representations of information - though the internet and social media - are infographics a quicker and clearer way to convey understanding of content required by students for productive tasks?'

As a theoretical tool, I will primarily consider the cognitive principle of meaningful learning (Brown 2007). Furthermore, I intend to juxtapose considerations of student visual literacy alongside the activation of content schema (Carrell and Eisterhold, 1984). In that sense, content schema theory is an explanation of how the reader of a text uses prior experiences or knowledge in order to learn and indeed. In the pure Kantian view, new information, new concepts and new ideas can only have meaning when they can be related to something the individual already knows. However, this paper considers whether this understanding similarly applies in a second language and more pertinently, are there better/other alternatives to present such information moreover through a body of text? In order to activate the reader's background or subject matter knowledge schemata this project offered the participants in an English discussion class a different medium – discussion topic infographics featuring imagery, graphics, charts and minimal text. Does this way of presenting information, in what I shall term *display schemata* dovetail with content schemata?

To further clarify what is meant by display schemata we can assume that the participants in the study, university first-year students on a mandatory discussion course at a university in Japan,

products of the digital age, are, for the most part, very much exposed to visual display media, from YouTube videos to memes, smartphone emoji to infographics. The study intended to activate this display schemata and ascertain the students' perceptions towards using infographics as a discussion/class preparatory activity.

Brown's cognitive principle *meaningful learning* (2007) assumes that information can be completely understood and used to make connections with previously known knowledge, aiding in further understanding. Facilitating those cognitive connections, activating and bridging knowledge across the two extended discussions in each weekly lesson that the students typically take part in, may well be better facilitated by, again, images more than by chunks of text. The study incorporated the use of infographics in order to 'join the dots' between each discussion topic.

As mentioned previously, there is a scarcity of research into this particular inquiry, however there are studies into classroom use of multimedia. Davidson (2014) highlights the use of infographics within a science class. The study revealed that in discussion of the infographics shown to the students, many became intrigued with the fusion of art and science. The aim of this current study speculates whether this blending of art and language may have a similar effect in an English discussion classroom.

Incorporating visuals into a pedagogical approach may indeed be a catalyst for speaking to a wider range of *learning styles* as visual aids and multimedia are usually used as scaffolding for the students in different ways and different levels (Van Staden, 2011). A study conducted by Sivapalan et. al (2010) highlighted the importance of not only using images but by using a range of multimedia to enhance students' interest – for example voice clips, animations and graphics in literary texts.

## **PROCEDURE AND VARIATIONS**

The classes in the pilot study were of a higher level. The participants placed in these two classes had TOEIC scores ranging upwards of 680. The process was a simple one. In the week before the lesson, an infographic was designed and created based upon the discussion topic with condensed and concise information drawn from the textbook reading (Appendix A). Official data was sourced from governmental press releases and from the applicable ministry's website (both from Japan and in some cases from official sources in the UK and USA). This information was collated and presented in the form of pictorial charts, graphs and images. These infographics were then printed in colour and laminated for the students to use in class. In order to vary how the students used the infographics, I gave them out at different stages of the lesson and also as an optional extra homework task.

### **At Home and in the Students' Own Time**

Students were given the option to use the infographics at home as well as in the classroom. An online class 'Pinterest' board was set up and the class members were invited to log in and join the group. By doing so they were able to see the forthcoming lesson's infographic and collaborate on any further ideas/images they would like to share with the group. Previous studies have suggested favourably towards the use of Pinterest as an out of class collaborative task for English discussion students at the same university (McEntee, 2018).

### **Before the Lesson Began**

For the most part, in the two classes being observed, the students often arrived early for the lesson and spent the time before the class chatting or playing with their smartphones. I decided to leave the infographics on the tables and prompted the students to make use of this time and to read the infographics and share some ideas in preparation for the class.

### **Replacing the Speaking Fluency Activity**

As the two classes in focus had a high level of communicative competence, the procedure involved in this study was to replace a speaking fluency task usually conducted at the start of the lesson, with a free exchange of ideas and thoughts based on the infographics. The students, in pairs, gave their opinions and offered their thoughts on the information presented to them in the infographic, this activity lasted for approximately 10 minutes.

### **Before Group Discussions**

The infographics were also sometimes used as part of a discussion preparation task, which is designed to help students generate ideas for the subsequent discussion. One example of this is a *station* activity whereby the students, typically in pairs, walk around the classroom and visit four framed questions posted on the wall. These short exchanges between students introduce the discussion topic and better enable them to participate in the extended discussion. In this scenario, the infographic would be added as a fifth station. This was intended to give the students some immediate and supplementary content for discussion.

## **DISCUSSION AND SURVEY RESULTS**

The rationale to implement this activity simply stemmed from observing student behaviours pre- and post-class – what they actually did in their ‘down time’ and it occurred to me that a high percentage of students were using their smartphones - either using Instagram and YouTube, gaming or checking various social media platforms and messaging – using an array of emoji/pictures. Very few students turned to a novel or even a textbook. This observation prompted the question as to about what could be done to adapt the lesson reading preparatory homework and add a visual element in an attempt to ‘mirror’ how the students appeared to be consuming media.

At the end of the course a simple five-question survey was administered (Appendix B) and the fifteen participants completed the questionnaire and gave their views on the use of infographics during their discussion class. All responses were written in English although students were given the option to write in Japanese if they wished to do so. Responses were organized by the common themes that appeared. Below is a sample of four student responses:

Using infographics makes people understand the contents of the textbook easier. And it would be best to exchange ideas on the infographic before discussion as a preparation, I am a visual learner.

Instead of before class or 3-2-1 fluency it might be better to for me to discuss with a group of four people.

I think it is much more useful in certain works just like preparing for a discussion, it is as same as way the news is presented in my smartphone in my opinion.

If we read it before the class, I will forget some of the information. For this reason, to discuss more deeply about a topic, I prefer to look at it right before the discussion.

These responses suggest that the best role for using infographics is as a discussion topic itself or a preparation task. Whilst originally intended to be used as a warm up or replacement

activity for the fluency task, student feedback suggests the infographics may have a more meaningful role to play during the lesson. Indeed, research over the last decade has largely focused on the role that infographics play as an aid to complement an article's content or to maintain the participants' attention (Morrison, 2013).

However, some responses revealed that students were quite favourable to using infographics as a homework task, and even with one view that creating and collaborating on an infographic would be an option, as illustrated below:

People who take part in the discussions should prepare the infographic before discussions so that they can gain enough background from that and use it as a tool to prove his or her ideas.

Finding some infographics before class is a good idea because students can get information before classes. It will improve the quality and contents of discussions and be more interesting.

For a homework task, I would prefer to use infographics instead of reading the textbook, I think image[s] will be better than words.

Infographics were also cited by one respondent as being beneficial when students do not have the textbook to hand.

I think it is easier to prepare with visual information homework because when I don't have the textbook, I can do the homework.

One respondent expressed reservations about how the information was presented in the infographic – this however could largely be due to my inexperience in graphic design.

I think the information in the infographic is too compactive [sic], it is hard to pick up in a short amount of time.

In contrast, another respondent felt that information illustrated in infographics was perhaps too superficial:

The points are too shallow which requires the individuals to elaborate on.

This comment supports the aim of the study which was to in fact encourage students to choose from the information presented and share their thoughts on the topic. However, this respondent felt that this was a difficult process of decision making:

I prefer to read the textbook. Infographics were stacked with information and it was hard to decide which order we should start discussing.

In review of the responses collected, the most intriguing were from respondents who thought to use infographics as a homework activity. Indeed, one student appeared to be suggesting that the students themselves could 'prepare' the infographic. This process would be interesting to implement and potentially foster student collaboration out of the lesson and towards a blended classroom. What information would the students critically filter in presentation of the infographic

for discussion? In doing so, discussion students would be engaged with negotiating digital literacy skills – information filtering, some might say a key competency for this digital age.

During the same survey, quantitative data was also collected on four prompts (Appendix A). The responses were recorded on a Likert scale consisting of four points (item one) and five points (items two and three). The fourth prompt required the students to record their answer from a multiple choice.

The majority of the students were unsure or had little knowledge as to what an infographic actually was (Figure 1). There may be several reasons as to why this may be, but it seems unusual that the students did not differentiate this presentation method to other forms of illustration.

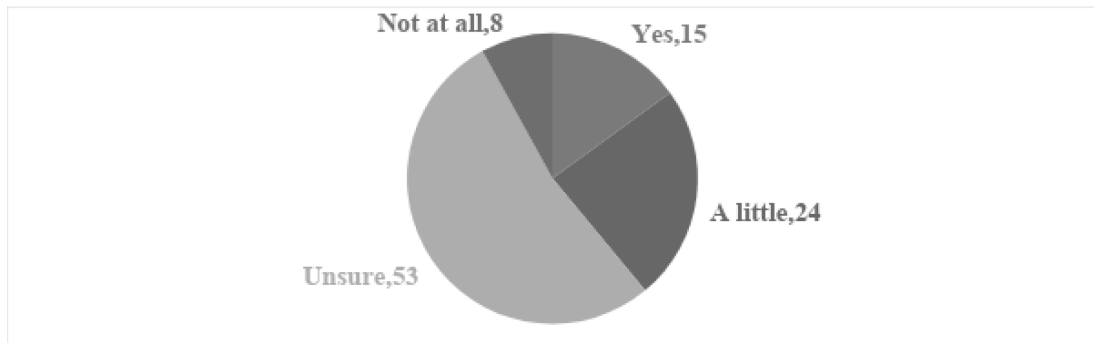


Figure 1. Item 1: “I was aware of infographics.”

Overwhelmingly the images and bite-sized chunks of information presented in the infographics appeared to have had a positive effect on the class and discussion preparation (Figure 2).

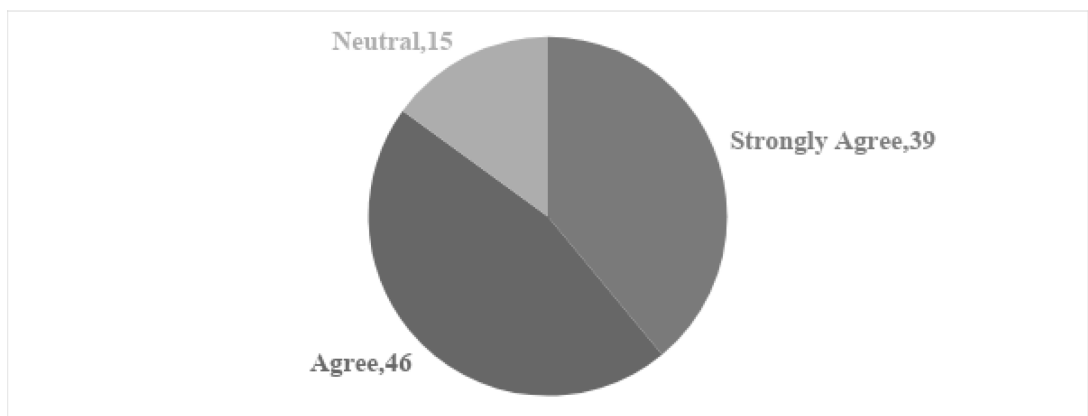


Figure 2. Item 2: “I found using infographics useful to give me ideas to discuss.”

Similarly, results proved favourable towards receiving information in a visual capacity more than through a large body of text (Figure 3). The results, 77% of respondents, favouring a blend of textual and visual information. This might not necessarily mean exclusively using infographics but potentially suggest support for a multimedia approach to discussion preparation.

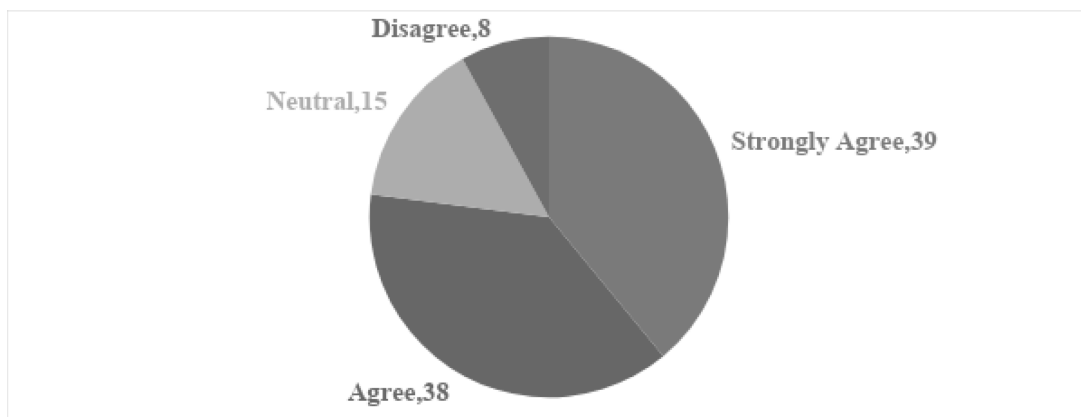


Figure 3. Item 3: “I prefer information presented visually more than reading.”

The results presented below (Figure 4) show that both qualitative and quantitative tend to support the study hypothesis that students believe infographics are a clearer way to convey understanding of the discussion topic.

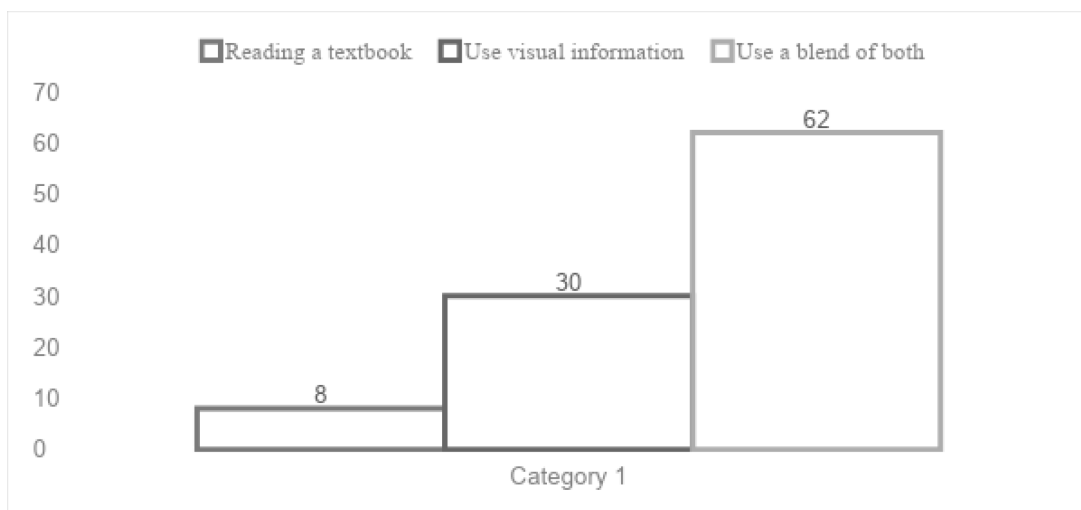


Figure 4. Item 4: “For future homework tasks I would prefer...”

## CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

This small-scale pilot study is intended to path the way for a more in-depth longitudinal study on a multimedia pedagogical approach to discussion preparation in the forthcoming new academic year. Most generally the survey results reflect positively on the use of a visual representation of the discussion topic content for preparation.

However, on balance, I acknowledge two major limitations in this process. The most glaring and obvious drawback is the limited ability to produce infographics of high quality. Qualitative results revealed one respondent felt some of the information presented was too “compactive [sic]”. Given that the role of the infographic was to impart data and discussion points in a simple, clear and visually stimulating way, this is something which would need further attention in any future study. Another drawback is the lack of motivation for students to do any extra research or study

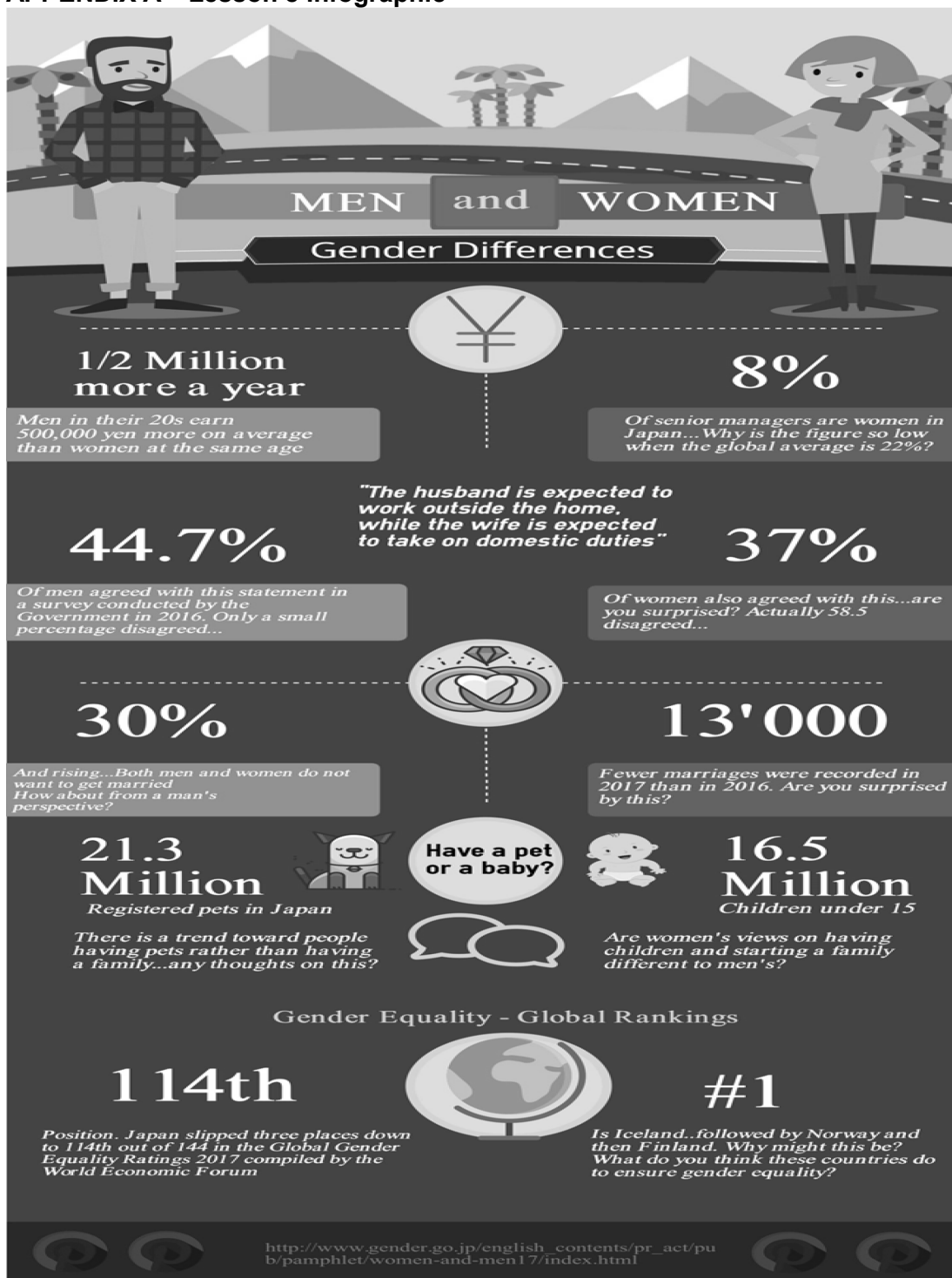
outside of the minimum textbook reading requirement, this possibly suggests any blended approach towards a discussion class would be hard to implement.

In conclusion, this pilot study has been an enlightening process and, in my opinion, has created more questions than it has tended to answer. The potential of fusing art or the image, both in the form of graphic design and as moving images while presenting or practicing a second language feels an intuitive line of further inquiry in this present digital age.

## REFERENCES

- Brown, D. H. (2007). *Teaching by Principles: An Interactive Approach to Language Pedagogy*. New York, NY: Pearson Longman.
- Carrell, P.L. & Eisterhold, J.C. (1983). Schema theory and ESL reading pedagogy. *TESOL Quarterly*, 17(4), 553-569.
- Davidson, R. (2014). Using infographics in the science classroom. *Science Teacher*, 81(3), 34-39.
- Krauss, J. (2012). *More than words can say: Infographics*. Retrieved February 4th, 2019 from <http://files.eric.ed.gov/fulltext/EJ982831.pdf>.
- McCue, T. (2013). *Why infographics rule*. Retrieved Feb 4th, 2015 from <http://www.forbes.com/sites/tjmccue/2013/01/08/what-is-an-infographic-and-ways-to-make-it-go-viral/>.
- McEntee, P (2018). Are you Pinterested? A Study into an Online Collaborative Homework Task. *New Directions in Teaching and Learning English Discussion*, 6, 194-200.
- Morrison, B. (2013). *Creating an effective infographic*. Retrieved Feb 4th, 2019 from <https://www.stryvemarketing.com/blog/creating-an-effective-infographic/>
- Sivapalan, S., Wan, F.A. & Khairun, N. (2010). A web-based multimedia approach to literature in Malaysian secondary schools: Designs and learning preferences. *European Journal of Social Sciences*, 12.
- Van Staden, A. (2011). Put reading first: Positive effects of direct instruction and scaffolding for ESL learners struggling with reading. *Perspectives in Education*, 29(4), 10-21.

## APPENDIX A – Lesson 8 Infographic





**APPENDIX B – Student Survey**

1. I was aware of infographics before I used them in my discussion class.

Yes	A little	Unsure	Not at all
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2. I found using infographics useful to give me extra ideas to discuss during the class.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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3. I prefer information presented visually (images) more than reading.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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4. For any future homework activities, which would you prefer to do to prepare for class?

- Read the textbook.
- Use visual information.
- Use a blend of both.

5. Please write any comments you may have on using infographics as a task to prepare for discussions (In English).