

Module: Logistics Management 354

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Learning activity:
Infographics

Learning technology:
Tableau or other
infographic software

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Context

Background overview

This module covers the research process. Before lecturing this module for the first time, the lecturer consulted with others in the field, either researchers or those teaching research methodology. He found that most modules like these take the students through the theory of the research process and even let them write a research proposal but they do not let them do research. Since the focus of this subject area is on applying theory in practice, the lecturer wanted the students to engage in a small-scale research project. At the same time, the lecturer wanted the students to present their research results in an exciting and accessible way.



Figure 1: The research process

Topic

Research capabilities have become useful skills for most individuals, whether they choose to pursue further studies (involving research) or a career in a chosen discipline. The research skills developed in this module can easily become transferable skills for problem solving in logistics and supply chain management issues.

The following key topics are covered in this module: the nature of business and logistical research; the research process; research topics and problems; research philosophies, approaches and designs; access to and the use of secondary and/or primary data; the analysis of quantitative and qualitative data; and the writing and presentation of a project report.

Established practice and the challenge

The module prepares third-year logistical students for the research part of their honours degree. As part of the research group assignment for the module, students work together on an approved research topic in groups consisting of a maximum of five students each. Each group drafts a research proposal to guide the group's research assignment. The assignment is broken down into well-balanced sub-assignments that each member of the group takes accountability for (typically a research question and a specific corresponding objective). In the past, students wrote up this research project in a report only.

Advantages associated with the integration of technology

The lecturer wanted the students to present their research in a way that would spark interest in the general public. After another lecturer mentioned how data visualisation is becoming a new basic skill, the lecturer started noting how infographics were used to represent research results. He found the [Tableau Viz of the Day](#) newsletter especially inspiring. Therefore, instead of letting the students write a research report, the lecturer designed a learning activity wherein the students present their entire research project in an infographic.

Student overview

In 2016, about 157 students were enrolled for the module. Students worked in groups, with the resultant 33 groups requiring research supervision on the research projects. The student cohort consisted of students studying BCom General, AgriSciences and other BCom programmes.

Other relevant role-players

Postgraduate students acted as research supervisors for the groups. Each supervisor had about six groups and therefore six research projects to lead. The supervisors were trained by the lecturer beforehand, the training covering basic supervisory skills, such as coaching. The research groups made appointments to see their supervisors, some consulting their supervisors more than others.

Learning and assessment activities

Educational approach

As the use of infographics has become more popular, data visualisation in this manner has become a crucial skill (Ferreira, 2014). Developing infographics engages students in various ways of learning (Laurillard, 2012). They are required to consolidate what they have learned by articulating their current conceptual understanding and present it in a visual manner. They are then required to pull together the entire research project and articulate their current thinking while collaborating with others.

Learning and assessment activities

As part of the lecture about data visualisation, the lecturer talked about how infographics can be used to move from data to insight, information thus becoming more meaningful and useful. Students could use Tableau,

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Microsoft Publisher or any other free infographic software to design an infographic that presented their research project findings. They were given examples of good infographics and a guide on how to create infographics. The groups submitted a range of products from interactive infographics to PDF documents.

The infographics were marked by the supervisors according to the following criteria: what was used to create a theme, story or message; the use of different graphics and visualisations to make the presentation appealing (using preattentive visual attributes); the mixing of text and graphics to convey the message; and the tools that were used (the software that was used and how easy or difficult it was). Each supervisor then selected the best infographic from her or his group of research projects. These infographics were then used as a presentation tool for a five to ten-minute presentation during a contact session.

The students therefore used infographics as a tool to tell the story of their research and taught them how to reduce a big project into something that could be presented quickly.

Learning environment

Collaborative settings

Students worked in groups of a maximum of five. CATME was used to divide the students into research groups according to their demographics, academic distribution and research focus areas, CATME Team-Maker allowing the lecturer to gather the relevant information from students and assign them to groups based on this information. The lecturer could choose the criteria and weighting that were most relevant to successful teamwork in the class. If the groups experienced any problems, they could consult their study leaders but CATME assisted in creating well-functioning groups.

Content resources

To complete the infographic section of the research project, students were given a lecture on data visualisation and the use of infographics. This included a definition of infographics, examples, principles of infographics and an introduction to the tools available to create infographics.

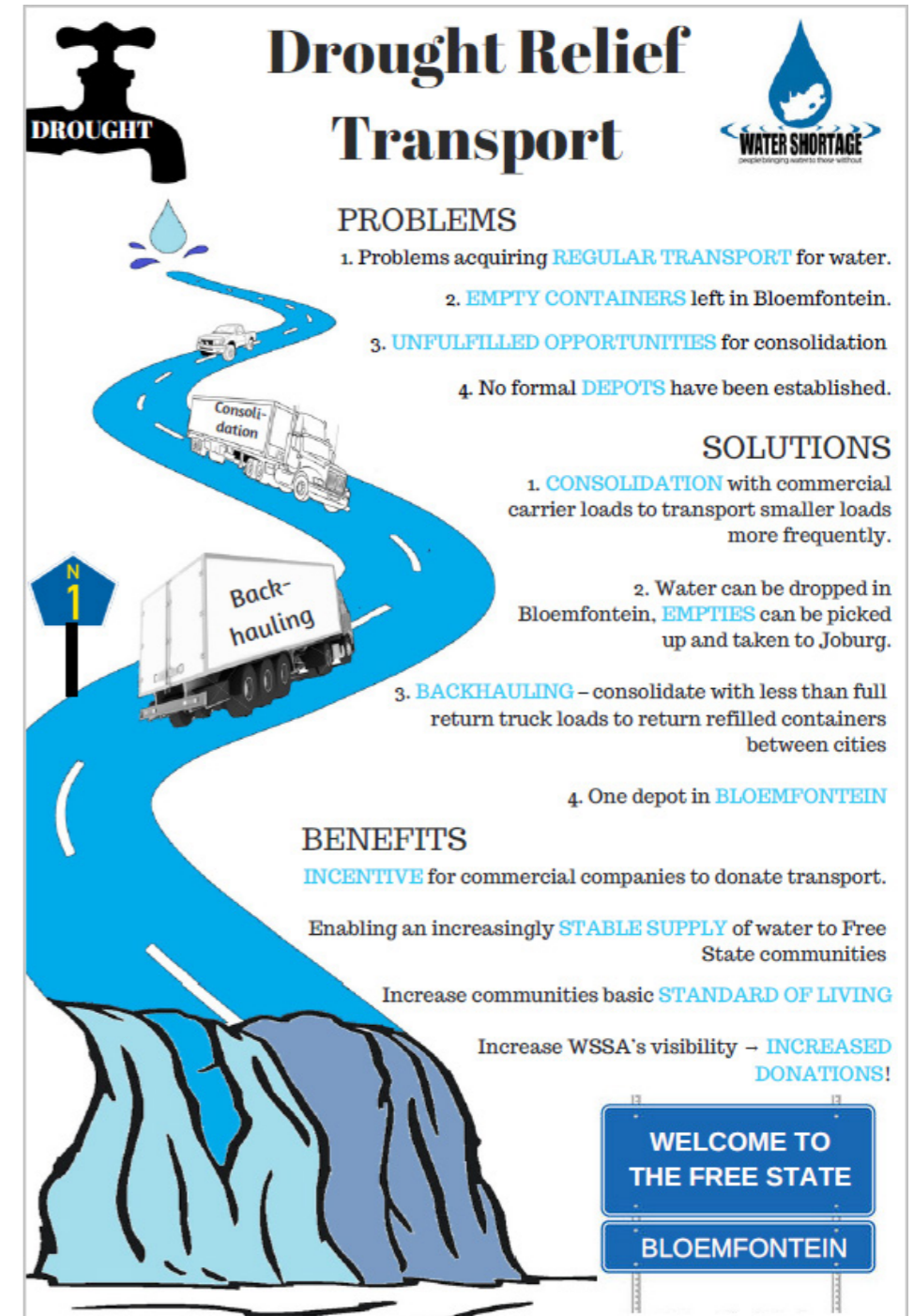


Figure 2: An infographic submitted by one of the groups

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Technology resources

[Tableau](#) was proposed as a possible tool to create infographics; this software allows users to analyse and visualise data.

[CATME](#) was used to create homogenous research teams. This is a system of secure, web-based tools that enables instructors to implement best practices in managing student teams. The lecturer used the CATME Team-Maker and CATME Peer Evaluation tools.

Student Experience

Student feedback on the learning experience

Students found that infographics helped them to convey the core information of their research projects to the rest of the class and contributed to their understanding of the visual representations required when presenting projects. They struggled with the graphics but the software that was used made it easier. The main challenge was condensing a lot of qualitative data for the infographics.



**Figure 3: Students working

General Advice

Lecturers should make sure that they and their students understand the principles of data visualisation (both quantitative and qualitative) when implementing learning activities like this. A lot of material and blogs are available on the topic, which can be integrated into a module. Students should be provided with good guidelines on how infographics can be used in their subject areas. It should be remembered that infographics are contextual and that students should not be provided with a recipe for creating an infographic but rather just with guidelines. This gives students the freedom to develop creative and innovative infographics.

References

Ferreira, J. 2014. Infographics: An introduction. Centre for Business in Society. Coventry University. Available: https://www.researchgate.net/publication/266082644_Infographics_An_introduction. [2017, March 27].

Laurillard, D. 2012. Teaching and a design science: *Building pedagogical patterns for learning and technology*. London: Routledge. 97–98.