

Chapter 11

Communicating Spatial Relations Using Online Chat: A Comparative Study Using Physical, Virtual, and Graphical Building Blocks

Theodor Wyeld
Flinders University, Australia

ABSTRACT

The block construction exercises described in this chapter were used to investigate how spatial communication about the manipulation of objects in virtual, physical, and graphical space is communicated using online text. Where this study differs from previous research in the area is in its use of a qualitative methodology to investigate how these types of interactions are structured, communicated, and interpreted via text-based media. What emerges from the qualitative analysis is new insights over the previous quantitative investigations. More particularly, this mode of investigation has revealed the apparent superior efficacy of the fragmenting of three-dimensional spatial arrangements into two-dimensional planar representations using a simple ABC123 grid-wise coordinate system. The spatial terms used by participants in their textual communications are filtered according to Lefebvre's thirdspace and deictic spatial expressions.

INTRODUCTION

This study sets out to investigate how its participants communicate spatial relations using an online textual chat tool. A series of case studies were used to progressively isolate any effects that emerged. Where it differs from previous studies in the field is in its use of a qualitative methodology. It uses this method over a quantitative approach in order to analyse in more detail those underlying meanings in participants' communications often not included in empirical research. As such, this study attempts to shed new light on understandings about why particular participant communication methods may be more effective than others in exchanging spatial relations information using text alone. It found that, across the studies, participants tended to fragment the three-dimensional information contained in the instruments

DOI: 10.4018/978-1-5225-5332-8.ch011

of the study to two-dimensional representations. These were then communicated using a range of spatial expressions from egocentric to allocentric and somewhere in between. A simple ABC123 grid-wise coordinate system emerged as the most efficient and accommodating of the myriad spatial-relations communication strategies partners employed.

In order to understand the methods used by participants to communicate spatial relations using text only, their communications were analysed using filters for extracting the spatial concepts contained. The first level filter extracted the egocentric-allocentric frame of reference. This was followed by analysis of the transitional expressions between egocentric and allocentric using Lefebvre's thirdspace. Finally, the specific deictic spatial expressions used in their communications were extracted and compared to isolate the specific spaces participants encountered and how they were experienced and communicated. It is in the final analysis of the deictic expressions that we get a glimpse of the way individual spatiality is communicated, how it can shift from egocentric to allocentric, and was used to arrive at the ABC123 grid schema.

CONCEPT OF SPACE

What 'space' is has been debated for millennia. For Plato (428-348 BCE), space and matter were the same. Whereas for Aristotle (384-322 BCE) it was always filled with matter. Descartes (1596-1650) later rejecting the Platonic and Aristotelian views, redefining space as bound by a three-dimensional coordinate system. Kant (2007) shifted the argument from philosophy to science by declaring space arbitrary. Heidegger (2006) returned space to a philosophical argument again by suggesting existence itself is spatial. Norberg-Schulz (1971) believed space gave meaning to events and actions within the human sphere, while Henri Lefebvre (1991) drew our attention to a third space – the space between the physical and the social. Since then, Spivak (1988), Soja (2008), Bhabha (2008) and others have attempted to refine Lefebvre's thirdspace by focusing on the margins; difference and hybridity; enabling other spaces to emerge; and, centre and margins operating as a space of radical resistance, respectively.

Today, we can think of Lefebvre's (1991) thirdspace as the space we create for ourselves from our social interactions, either physically or digitally mediated or both. In this way, his thirdspace could also be seen as the space of a computer-mediated social network. A unifying space where information can be discussed without privilege to any user; a hybrid space between Lefebvre's lived and conceived, real and imagined spaces (Soja, 2009 in Edirisinghe, Nakatsu, Cheok, & Widodo, 2011; Ikas & Wagner, 2008).

TYPES OF SPACES

We can describe Lefebvre's (1991) thirdspace of the computer mediated social network as composed of multiple instances of different types of space. They include:

- The physical space of the keyboard, mouse and screen, handheld device, and passive terminal, such as TV;
- Online spaces are 'places' users go to interact: video games, chatting, video conferencing and so on;

48 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/communicating-spatial-relations-using-online-chat/195069

Related Content

Teaching Practicum Assessment Application: Reporting on a Case Study

M. Noor Davids (2020). *Handbook of Research on Diverse Teaching Strategies for the Technology-Rich Classroom* (pp. 254-267).

www.irma-international.org/chapter/teaching-practicum-assessment-application/234259

An Integrated Model to Assess EFL Learners' Online Learning Behaviour

Tiantian Wu (2023). *International Journal of Technology-Enhanced Education* (pp. 1-17).

www.irma-international.org/article/an-integrated-model-to-assess-efl-learners-online-learning-behaviour/323453

Nurturing Curiosity Learning Through STEM in Physical Education in Zimbabwe

Thembelihle Gondo and Jenet Jean Mudekunya (2020). *International Journal of Technology-Enabled Student Support Services* (pp. 20-30).

www.irma-international.org/article/nurturing-curiosity-learning-through-stem-in-physical-education-in-zimbabwe/270261

Online English Reading Instruction in the ESL Classroom Based on Constructivism

Yan Liu, Hongbing Liu, Yan Xu and Hongying Lu (2019). *International Journal of Technology-Enabled Student Support Services* (pp. 39-49).

www.irma-international.org/article/online-english-reading-instruction-in-the-esl-classroom-based-on-constructivism/244210

Investigating Students' Perceptions of DingTalk System Features Based on the Technology Acceptance Model

Danhua Peng (2023). *International Journal of Technology-Enhanced Education* (pp. 1-17).

www.irma-international.org/article/investigating-students-perceptions-of-dingtalk-system-features-based-on-the-technology-acceptance-model/325001