

# Exploring the interaction between learners and tools in e-learning environments

Serpil Meri<sup>1</sup>

**Abstract.** The present research explores the interaction between learners and tools in e-learning environments. In order to explore that issue, this study analyzed and interpreted the findings obtained through observation and interview with 10 international students who wished to improve their learning of English by using the English for Academic Purposes (EAP) toolkit equipped and accessed in Blackboard, where learners can easily use it. Along with data from three-time observations and interviews, an in-depth dataset was provided by means of the think-aloud protocol method, which indicated what the students were doing with and thinking of their experiences in the process of learning in the toolkit. The findings showed that there was a substantial indication of the interaction between learners and tools in e-learning environments and the perceptions about their experience in learning in a self-directed e-learning environment, which might help designers to consider some aspects while they are setting up and improving the tools and online learning resources. In addition, the results provide more issues to discuss in terms of the benefit of promoting interaction in self-directed e-learning environments.

**Keywords:** e-learning environments, self-directed e-learning environment, interaction, EAP toolkit.

## 1. Introduction

Learners are supported in different learning environments such as in classrooms, online or blended learning environments. In those environments, they are supposed

---

1. University of Southampton, UK; sm17g10@soton.ac.uk

**How to cite this article:** Meri, S. (2015). Exploring the interaction between learners and tools in e-learning environments. In F. Helm, L. Bradley, M. Guarda, & S. Thoušny (Eds), *Critical CALL – Proceedings of the 2015 EUROCALL Conference, Padova, Italy* (pp. 397-403). Dublin: Research-publishing.net. <http://dx.doi.org/10.14705/rpnet.2015.000365>

to interact with their fellows, tutors, media or tools; thus, they can be encouraged to improve their learning. However, there has been a growing interest in providing online learning resources and computers or laptops in educational settings (e.g. Collins & Halversont, 2010; Garrett, 2009; Selwyn, 2003; Yang & Chen, 2007). Therefore, the main interest in research of e-learning environments has been the role of learners in those environments, which is an essential element to be considered by developers (Jarvis, 2012).

Besides, learners have the flexibility to advance in their learning in e-learning environments (Lee & Gibson, 2003; Oladoke, 2006). Together with the flexibility, anytime and anywhere access can be offered to learners, which is the substantial advantage of e-learning environments rather than in classroom-based learning environments (Rhode, 2009).

As illustrated in Laurillard's (2012) conversational framework, learning takes place by means of the interaction between the teacher and learner in blended or classroom-based learning environments. As for learning in self-directed e-learning environments where learners are alone and completely independent (Ghirardini, 2011) and might feel isolated (Zembylas, Theorou, & Pavlakis, 2008), the interaction and communication between learners and tools should be taken into consideration in order to overcome the possibility of their loneliness and isolation. That is, in order to reach the high level of learning in those self-directed e-learning environments, the interaction between them and the tools should be provided, which indicates learners' experiences in using online resources (Hirumi, 2006). In the meantime, designers should be informed about their learning experiences in those environments, as they are the ones to determine and set up the learning design (Hedberg & Sims, 2001).

Although there have been many studies about the interaction between learners and their fellows or instructors in those environments which show that it has a substantial impact on their learning (Angeli, Valanides, & Bonk, 2003; Fung, 2004; Johnson, 2006; Topper, 2005), a few of the studies have been conducted to investigate the interaction between learners and tools which enables learners to improve their learning by themselves (i.e. Jackson, Krajcik, & Soloway, 1998).

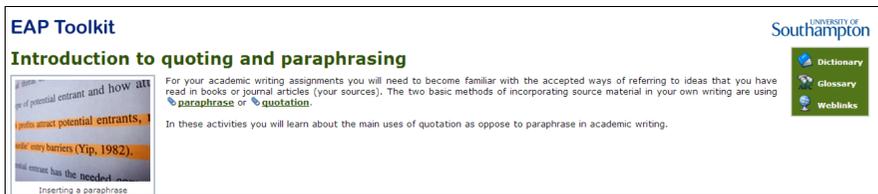
Considering the importance of the study, the present research aims to explore the interaction between learners and tools in e-learning environments by looking at their behaviours, experiences, preferences and learning styles in an e-learning environment.

## 2. Method

### 2.1. Participants and setting

The participants of the present study were 10 international students who were volunteers to take part in the research from February to the end of May in 2013. In order to further their study for the postgraduate study, the participants came to the UK to improve their skills. Therefore, they attended the English for Academic Studies (EAS) course at the University of Southampton. During their study, they had the opportunity to benefit from the EAP toolkit, which provides “a comprehensive set of interactive learning resources for developing the language and study skills of international students and students whose first language is not English” (eLanguages, 2012, para 1). While learning in the toolkit, they obtained the introduction, information/explanation, instruction and feedback from the activity depending on their use of the learning tasks (see Figure 1). Additionally, they could take the advantage of the section of web links, glossary and dictionary if they needed more help.

Figure 1. A sample of introduction and links in the EAP toolkit



Consequently, a self-directed e-learning environment was provided for participants to develop their skills and academic learning.

### 2.2. Data collection and analysis procedure

In order to collect data, a qualitative study was conducted. Observations were made for 15 minutes in the beginning, middle and last weeks of the course via Camtasia<sup>2</sup>, which recorded both the computer screen and the face of the participants who were performing the activities in the EAP toolkit chosen in the first two observation sessions by the researcher but in the last observation session by the participants. In the process, the think-aloud protocol method was applied to see what they were thinking and how they went through the information or

2. <https://www.techsmith.com/camtasia.html>

conducted the activity. Follow-up and semi-structured interviews were also carried out to let them express their perceptions, feelings and preferences about their experience in an e-learning environment. Data from both observations and interviews were analyzed by creating codes in NVivo<sup>3</sup> and then interpreted and discussed as shown in the next section.

### 3. Discussion

The findings from observations and interviews shed light on the interaction between learners and tools in e-learning environments. The conduction of the think-aloud protocol method triggered the use of self-talk of approximately all of the participants. Their use of self-talk showed that scaffolds such as introduction, information/explanation, instruction and feedback provided in the toolkit enabled them to instruct, explain, inform and introduce the topic to themselves and reflect on their learning. Furthermore, self-scaffolding was used “through the dialogic self” (Granott, 2005, p. 148) by most of them as if they addressed other people. By this, they improved their confidence by giving themselves motivational scaffolding after looking at the feedback. Moreover, the use of ‘OK’ as self-talk represented their thought, which showed that ‘I understand’ was not ‘unnecessary verbiage’ in the present study (Eveland & Dunwoody, 2000). Additionally, they developed their learning strategies including cognitive, metacognitive, affective and meta-affective strategies on their own (Chang & Sun, 2009; Luzón, 2006), which was the result of their interaction with scaffolds in the activities.

Together with the use of self-talk, participants had different experiences in benefiting from learning activities in terms of handling their learning in the toolkit. Although they increased their positive feelings about learning through the toolkit over time, nearly half of them required more audio-visual help and activities in the toolkit or tutor’s help because of the lack of support provided in the toolkit. The difference in learning styles can be seen in their preference in following the order of the section in the activities. Most activities were sequential, whereas a few of them were global. As seen, the present research tended to display the interaction between participants and the toolkit via the use of self-talk, the benefit from scaffolders and individual improvement of motivation and learning strategy. However, participants needed more help, despite the improvement in their learning and the increase of their positive perception about their experience in the EAP toolkit.

---

3. <http://www.qsrinternational.com/product>

#### 4. Conclusions

This study explored the interaction between learners and tools in an e-learning environment. It concluded that learners tended to have a kind of conversation in a self-directed e-learning environment with the help of scaffolding but without any help from tutors. Although their interaction with online resources was in contrast with the indication of the conversational framework for learning with the interaction or conversation with fellows or tutors (Laurillard, 2012), the current research put forward that the tutor might be replaced in e-learning environments if online learning resources are designed according to users' requirements. Above all, that kind of interaction supported learners to have or improve the ability to manage and handle their learning. Considering the importance of enhancing the interaction between learners and online resources in a self-directed e-learning environment, designers should take into account the provision of necessary assistance in order for users to take control over their learning in an e-learning environment. As the main limitation of the current study is that it does not count on a large dataset, further studies should be designed to include more participants and investigate learners' interaction with well-designed online resources.

#### 5. Acknowledgements

I would like to thank the Republic of Turkey to support my research through my PhD study. Also, I appreciate both the help of students by participating in my research and the support of University of Southampton to allow me to conduct this study in their institution. Last but not least, I am very grateful to my supervisor, Professor Vicky Wright for her support and feedback.

#### References

- Angeli, C., Valanides, N., & Bonk, C. J. (2003). Communication in a web-based conferencing system: the quality of computer-mediated interactions. *British Journal of Educational Technology*, 34(1), 31-43.
- Chang, W. L., & Sun, Y. C. (2009). Scaffolding and web concordancers as support for language learning. *Computer Assisted Language Learning*, 22(4), 283-302. doi:10.1080/09588220903184518
- Collins, A., & Halverson, R. (2010). The second educational revolution: rethinking education in the age of technology. *Journal of Computer Assisted Learning*, 26(1), 18-27. doi:10.1111/j.1365-2729.2009.00339.x
- eLanguages. (2012). The EAP Toolkit. Retrieved from [http://www.elanguages.ac.uk/eap\\_toolkit.php](http://www.elanguages.ac.uk/eap_toolkit.php)

- Eveland Jr, W. P., & Dunwoody, S. (2000). Examining information processing on the World Wide Web using think aloud protocols. *Media Psychology*, 2(3), 219-244. doi:10.1207/S1532785XMEP0203\_2
- Fung, Y. Y. H. (2004). Collaborative online learning: interaction patterns and limiting factors. *Open Learning*, 19(2), 135-149. doi:10.1080/0268051042000224743
- Garrett, N. (2009). Computer-assisted language learning trends and issues revisited: integrating innovation. *The Modern Language Journal*, 93(s1), 719-740. doi:10.1111/j.1540-4781.2009.00969.x
- Ghirardini, B. (2011). E-learning methodologies: a guide for designing and developing e-learning courses. *Food and Agriculture Organization of the United Nations*.
- Granott, N. (2005) Scaffolding dynamically toward change: previous and new perspectives. *New Ideas in Psychology*, 23(3), 140-151. doi:10.1016/j.newideapsych.2006.07.002
- Hedberg, J., & Sims, R. (2001). Speculations on design team interactions. *Journal of Interactive Learning Research*, 12(2), 189-214. Retrieved from <http://www.editlib.org/p/8419/>
- Hirumi, A. (2006). Analysing and designing e-learning interactions. In C. Juwah (Ed.), *Interactions in online education: Implications for theory and practice* (pp. 46-71). New York: Routledge.
- Jackson, S. L., Krajeck, J., & Soloway, E. (1998, January). The design of guided learner-adaptable scaffolding in interactive learning environments. In *Proceedings of the SIGCHI conference on Human factors in Computing Systems* (pp. 187-194). ACM Press/Addison-Wesley Publishing Co. doi:10.1145/274644.274672
- Jarvis, H. (2012). Computers and learner autonomy: trends and issues. *British Council ELT*, 387. Retrieved from [http://englishagenda.britishcouncil.org/sites/ec/files/B208\\_ELTRP%20Jarvis%20Report\\_AW.pdf](http://englishagenda.britishcouncil.org/sites/ec/files/B208_ELTRP%20Jarvis%20Report_AW.pdf)
- Johnson, G. M. (2006). Synchronous and asynchronous text-based CMC in educational contexts: a review of recent research. *TechTrends*, 50(4), 46-53. doi:10.1007/s11528-006-0046-9
- Laurillard, D. (2012). *Teaching as a design science: building pedagogical patterns for learning and technology*. Oxon, UK: Routledge, Taylor & Francis Group.
- Lee, J., & Gibson, C. C. (2003). Developing self-direction in an online course through computer-mediated interaction. *The American Journal of Distance Education*, 17(3), 173-187. doi:10.1207/S15389286AJDE1703\_4
- Luzón, M. J. (2006). Providing scaffolding and feedback in online learning environments. *Les Melanges CRAPEL 28 n° spécial: TIC et autonomie dans l'apprentissage des langues*. Retrieved from [http://www.atilf.fr/IMG/pdf/melanges/8\\_LUZON.pdf](http://www.atilf.fr/IMG/pdf/melanges/8_LUZON.pdf)
- Oladoke, A. O. (2006). Measurement of self-directed learning in online learners. *Dissertation Abstracts International*, 67(1), (UMI No. 3206369).
- Rhode, J. (2009). Interaction equivalency in self-paced online learning environments: an exploration of learner preferences. *The International Review of Research in Open and Distributed Learning*, 10(1). Retrieved from <http://files.eric.ed.gov/fulltext/EJ831712.pdf>

- Selwyn, N. (2003). Why students do (and do not) make use of ICT in university. *Paper presented to the 'Finding Common Ground: IT Education, Dearing and Democracy in the Information Society' Conference University of Leeds Department of Computing - July 9th 2003*. Retrieved from <http://www.leeds.ac.uk/educol/documents/00003130.htm>
- Topper, A. (2005). Facilitating student interactions through discursive moves: an instructor's experience teaching online graduate courses in educational technology. *The Quarterly Review of Distance Education*, 6(1), 55-67.
- Yang, S. C., & Chen, Y. J. (2007). Technology-enhanced language learning: a case study. *Computers in Human Behavior*, 23(1), 860-879. doi:10.1016/j.chb.2006.02.015
- Zembylas, M., Theodorou, M., & Pavlakis, A. (2008). The role of emotions in the experience of online learning: challenges and opportunities. *Educational Media International*, 45(2), 107-117. doi:10.1080/09523980802107237

Published by Research-publishing.net, not-for-profit association  
Dublin, Ireland; info@research-publishing.net

© 2015 by Research-publishing.net (collective work)  
© 2015 by Author (individual work)

Critical CALL – Proceedings of the 2015 EUROCALL Conference, Padova, Italy  
Edited by Francesca Helm, Linda Bradley, Marta Guarda, and Sylvie Thouéšny

**Rights:** All articles in this collection are published under the Attribution-NonCommercial -NoDerivatives 4.0 International (CC BY-NC-ND 4.0) licence. Under this licence, the contents are freely available online (as PDF files) for anybody to read, download, copy, and redistribute provided that the author(s), editorial team, and publisher are properly cited. Commercial use and derivative works are, however, not permitted.



**Disclaimer:** Research-publishing.net does not take any responsibility for the content of the pages written by the authors of this book. The authors have recognised that the work described was not published before, or that it is not under consideration for publication elsewhere. While the information in this book are believed to be true and accurate on the date of its going to press, neither the editorial team, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, expressed or implied, with respect to the material contained herein. While Research-publishing.net is committed to publishing works of integrity, the words are the authors' alone.

**Trademark notice:** product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

**Copyrighted material:** every effort has been made by the editorial team to trace copyright holders and to obtain their permission for the use of copyrighted material in this book. In the event of errors or omissions, please notify the publisher of any corrections that will need to be incorporated in future editions of this book.

Typeset by Research-publishing.net  
Fonts used are licensed under a SIL Open Font License

ISBN13: 978-1-908416-28-5 (Paperback - Print on demand, black and white)  
Print on demand technology is a high-quality, innovative and ecological printing method; with which the book is never 'out of stock' or 'out of print'.

ISBN13: 978-1-908416-29-2 (Ebook, PDF, colour)  
ISBN13: 978-1-908416-30-8 (Ebook, EPUB, colour)

Legal deposit, Ireland: The National Library of Ireland, The Library of Trinity College, The Library of the University of Limerick, The Library of Dublin City University, The Library of NUI Cork, The Library of NUI Maynooth, The Library of University College Dublin, The Library of NUI Galway.

Legal deposit, United Kingdom: The British Library.  
British Library Cataloguing-in-Publication Data.  
A cataloguing record for this book is available from the British Library.

Legal deposit, France: Bibliothèque Nationale de France - Dépôt légal: décembre 2015.