**Appendix**

***Summary of meta-analysis on efficiency in technology-assisted second language learning***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year inclusion | Author | Year of publication | Effect size | Sample size | No. of studies | Learning outcomes | Technology |
| 1997–2001 | Zhao | 2003 | 1.12 | 419 | 9 | General | CALL |
| Up to 2002 | Taylor | 2006 | 1.09 | 875 | 18 | Reading comprehension | CALL glossing |
| 1970–2006 | Grgurović *et al*. | 2013 | 0.24/0.35 | NA | 37 | General | CALL |
| Up to 2006 | Taylor | 2009 | 0.51 | 1,845 | 32 | Reading comprehension | CALL glossing |
| Up to 2007 | Abraham | 2008 | 1.25 | NA | 6 | Reading Vocabulary | CALL glossing |
| 1990–2009 | Yun | 2011 | 0.46 | 1,560 | 10 | Vocabulary | Hypertext glossing |
| 2005–2010 | Chiu *et al*. | 2012 | 0.96 | 1,116 | 14 | General | Game based |
| 2004–2011 | Chiu | 2013 | 0.75 | 1,684 | 16 | Vocabulary | CALL |
| 1990–2012 | Ziegler | 2015 | 0.13 | 623 | 14 | General | CMC |
| 2000–2012 | Lin | 2015 | 0.4 | 1,712 | 25 | Oral proficiency | CMC |
| 2000–2012 | Lin *et al*. | 2015 | 0.44/0.41 | NA | 59 | Communication | CMC |
| 2008–2015 | Taj *et al*. | 2016 | 0.8 | 813 | 13 | General | MALL |