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An Investigation into the Effect of Mobile-Assisted Language Learning on University Students' Proficiency in English as a Foreign Language

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Background: Languages

- Around 7,000 languages are spoken in the world; and Chinese Mandarin, Spanish and English are the most spoken languages as L1 (Weber 1999).
- Because of colonialism, globalization, economic, technological and cultural developments, English has become the top international language, and it is considered a global language (Crystal 2003).
- English was adopted as an official language and a medium of instruction in many countries, even though in some countries such as Rwanda, it is a FL (Nyika 2015; Rosendal 2009).
- There are many advantages associated with being proficient in a global lingua franca, which is English langue (Samuelson & Freedman 2010).

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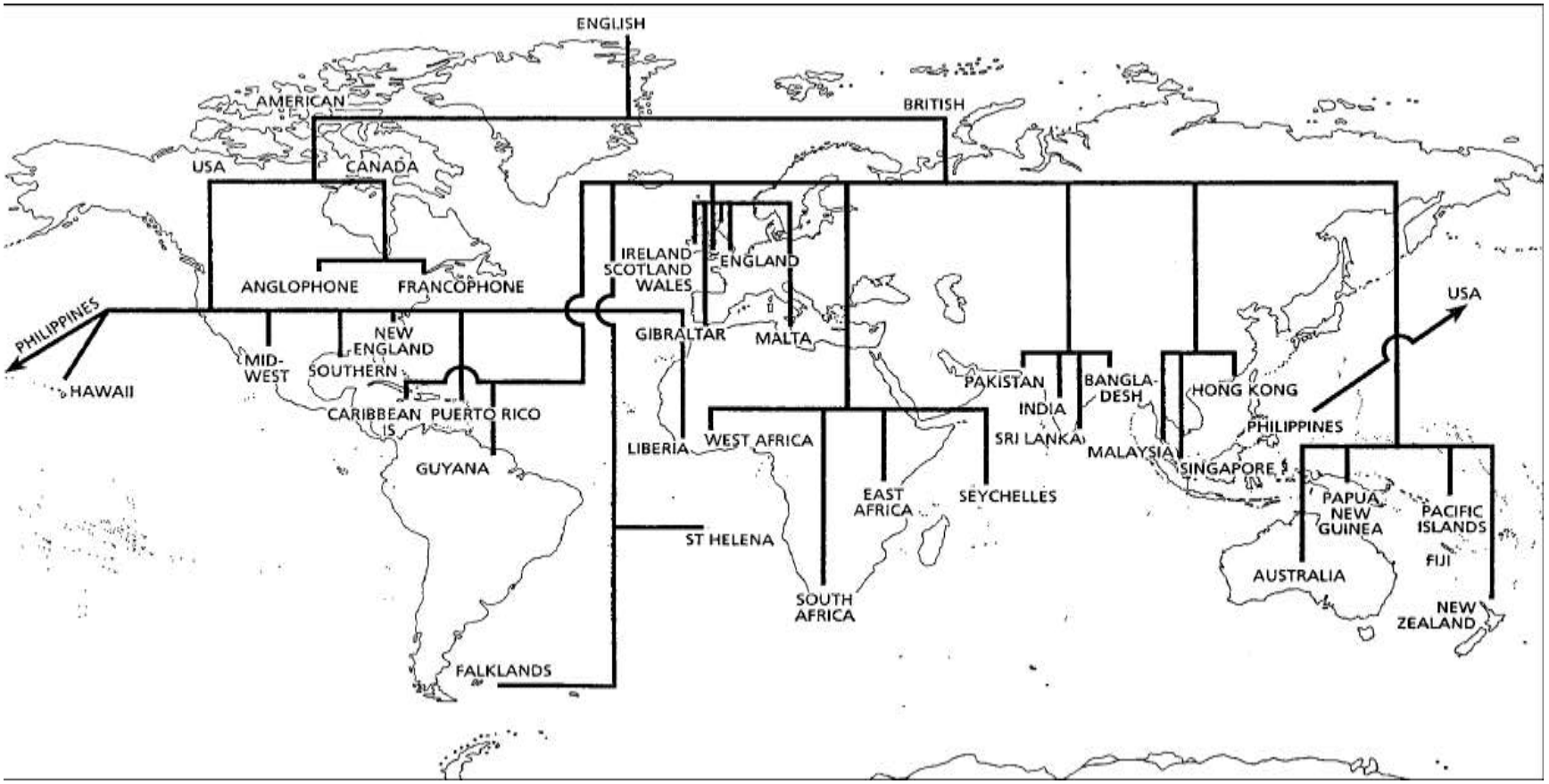
Background: Languages

A tree representation of English language spread as a global language (Crystal 2003)



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Background: Languages & Technology

- In 1950s, technology in language learning started with the use of audio-visual equipment; the language teacher had to set the learning tasks on one hand, and the language learners had to complete the tasks on the other hand (Abbott 2013; Alotaibi, Alamer & Al-Khalifa 2015).
- In 1960s, the University of Illinois, USA, started the 'Programmed Logic for Automated Teaching Operations' project, known as PLATO, which was a language lab in a form of a multi-user computer system (Park & Slater 2014).
- In the late 1970s, with the rise of modern computers, computer labs began to replace audio language labs (Alotaibi, Alamer & Al-Khalifa 2015).
- In the 1980s, the term CALL was first introduced, and the first language learning softwares and CALL articles were published (Alotaibi, Alamer & Al-Khalifa 2015).

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Background: Languages & Technology

- In the early 1990s, with the emergence of Internet, the computer language labs allowing students to record, view, upload and download multimedia were introduced (Alotaibi, Alamer & Al-Khalifa 2015).
- In 1994, with the rise of mobile devices such as PDAs, the term MALL was introduced as a field of study with the main objective of realizing the affordances of mobile devices in SLA (Burston 2014).
- Nowadays, almost everyone owns a mobile device; and mobile technologies have made their way into language classrooms, offering advantages through flexibility of time, space, and mode of communication (Park & Slater 2014).
- Compared to using computers, there are more advantages associated with using MTLL, mainly because of their permanency, accessibility, immediacy and interactivity affordances (Hazaea & Alzubi 2016).
- In addition, mobile devices are generally cheaper than computers, and they are easy to operate.

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Problem Statement & Focus

- In countries where English is used as a foreign language, attaining a high level of English proficiency is problematic. This is mainly because learners are not exposed to a sufficient English language input, the learning environment does not favour English learning, and there are no opportunities for English language output.
- Learners are exposed to a limited input which they receive from the formal English language classrooms. And in most cases, they are taught by English non-native speakers who use conventional teaching methods, they have access to limited conventional teaching-and-learning materials such as printed books, journals and computers, and they do not get enough opportunities to practice English in their communities outside the classroom setting.
- This study attempted to integrate the training in and the use of MTLL within the existing formal EFL classroom at the University of Rwanda, and to investigate the contribution that mobile input can make to the attainment of a higher level of proficiency in EFL.

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Research Aims

- To investigate the effect of:
  i. the use of MTLL after training,
  ii. the use of MTLL without training, and
  iii. the use of traditional teaching materials alone, on EFL learners' proficiency.
- To offer suggestions regarding how MTLL can be effectively integrated into conventional teaching in EFL classrooms.

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- The field of SLA was introduced in early 1970s, and "at least forty theories of SLA have been proposed" (Larsen-Freeman & Long 1991:227).
- "There is no theory of… SLA that does not recognize the importance of input, although theories differ as to its significance" (Gass & Torres 2005:2).

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Theoretical Framework

- There are four theories which pay so much attention on input (Ellis & Shintani 2014):
  - **i. Incidental Learning Hypothesis**: Learners can 'pick up' L2 forms simply through exposure to input.
  - **ii. Frequency Hypothesis**: Learners learn associatively by identifying and then storing sequences of sounds, syllables and words that occur in the input.
  - **iii. Input Hypothesis**: Learners acquire language by understanding messages or by receiving a comprehensible input.
  - **iv. Noticing Hypothesis**: Learners acquire language through the conscious registration of formal features in the input.

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Theoretical Framework

- "Most of the [SLA] theories born in the last three decades are revitalization of old vocabulary; they are more or less assumption-based" (Shakouri & Shokouhi 2015:73).
- **Constructivism** is still recognised as "the leading metaphor of human learning since the 1970s" (Liu & Mathews 2005:386).
- **Constructivism** is a metatheory which is relevant even in the context of the current technological world (Talja, Tuominen & Savolainen 2014).

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Theoretical Framework

- In addition to the role of **input** in SLA which is the main focus of other theories, constructivism considers other factors mainly **interaction**, the **learning environment**, as well as the **learners' learning abilities**.
- **Constructivism** claims that knowledge is not transmitted to the learners; learners construct knowledge by interacting with the real world (Cobern 1993; Gray & MacBlain 2015).
- In conformity with constructivism, "there is every reason to expect that MALL can make significant contributions to improving language learning" (Burston 2015:17), mainly by removing the challenges related to the conventional teaching-and-learning methods.

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Methodology

- Mixed-methods approach was used for data collection and analysis.
- Four sample groups were purposively selected:

i. **Experimental Group A1**: Students who made use of MTLL after training,

ii. **Control Group A2**: Students who made use of MTLL without training,

iii. **Experimental Group B1** & **Control Group B2**: Students who made use of conventional learning materials.

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Data elicitation:

- On one hand, a training on the use of MTLL in for EFL learning was designed and provided to EG.A1; and a mobile constructivist learning environment was created, and the use of MTLL during the experimental period was guided and monitored (EG.A1 & CG.A2).
- On the other hand, the use of additional conventional learning materials, as well as learning from the formal language classroom were ensured (EG.B1 & CG.B2).

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Data collection:

- An English language proficiency test was used to determine the effect of being trained in/or using MTLL, versus using the conventional teaching materials on students' proficiency (all E&CGs).
- Semi-structured interviews, focus group discussions, survey and observation methods were used to investigate the learners' linguistic and technology background, and their attitudes and experience with MTLL training and use (all E&CGs).

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Findings: Pre

Comparison between sample groups	First mean	Second mean	Mean difference	Standard error	p
{1} - {2}	EG A1	CG A2	0.00	0.99	1.00
{1} - {3}	EG A1	EG B1	0.67	0.99	0.50
{1} - {4}	EG A1	EG B2	-0.07	0.99	0.95
{2} - {3}	CG A2	EG B1	0.67	0.99	0.50
{2} - {4}	CG A2	EG B2	-0.07	0.99	0.95
{3} - {4}	EG B1	CG B2	-0.73	0.99	0.46

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Findings: L & S

Group	Pre-test			Post-test			Pre-test vs. Post-test (p-values)
	Range	Mean	Std. Dev.	Range	Mean	Std. Dev.	
EG A1 (n=15)	10 - 16	13.93	1.75	14 - 20	17.20	1.42	0.00
CG A2 (n=15)	12 - 16	13.87	1.36	14 - 19	16.60	1.40	0.00
EG B1 (n=15)	10 - 18	14.13	2.20	13 - 20	16.47	2.23	0.00
CG B2 (n=15)	5 - 17	13.80	3.00	12 - 17	15.20	1.57	0.05

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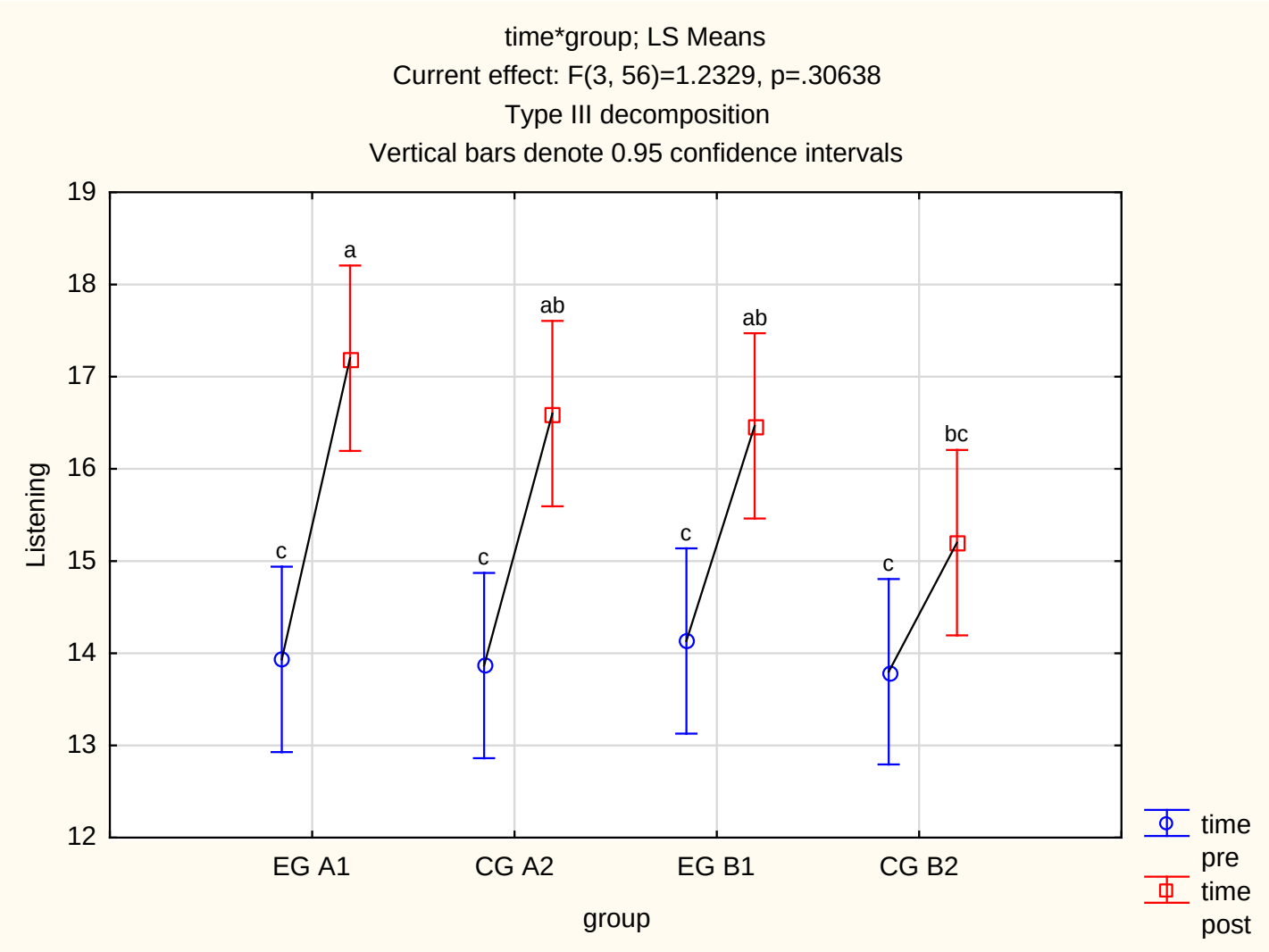
Findings: L & S



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Findings: R & W

Group	Pre-test			Post-test			Pre-test vs. Post-test (p-values)
	Range	Mean	Std. Dev.	Range	Mean	Std. Dev.	
EG A1 (n=15)	9 - 20	13.33	2.94	17 - 25	21.07	2.40	0.00
CG A2 (n=15)	10 - 19	13.40	2.16	14 - 22	17.87	2.50	0.00
EG B1 (n=15)	9 - 15	12.47	1.92	12 - 19	16.40	1.76	0.00
CG B2 (n=15)	11 - 20	13.53	2.42	8 - 17	14.47	2.20	0.27

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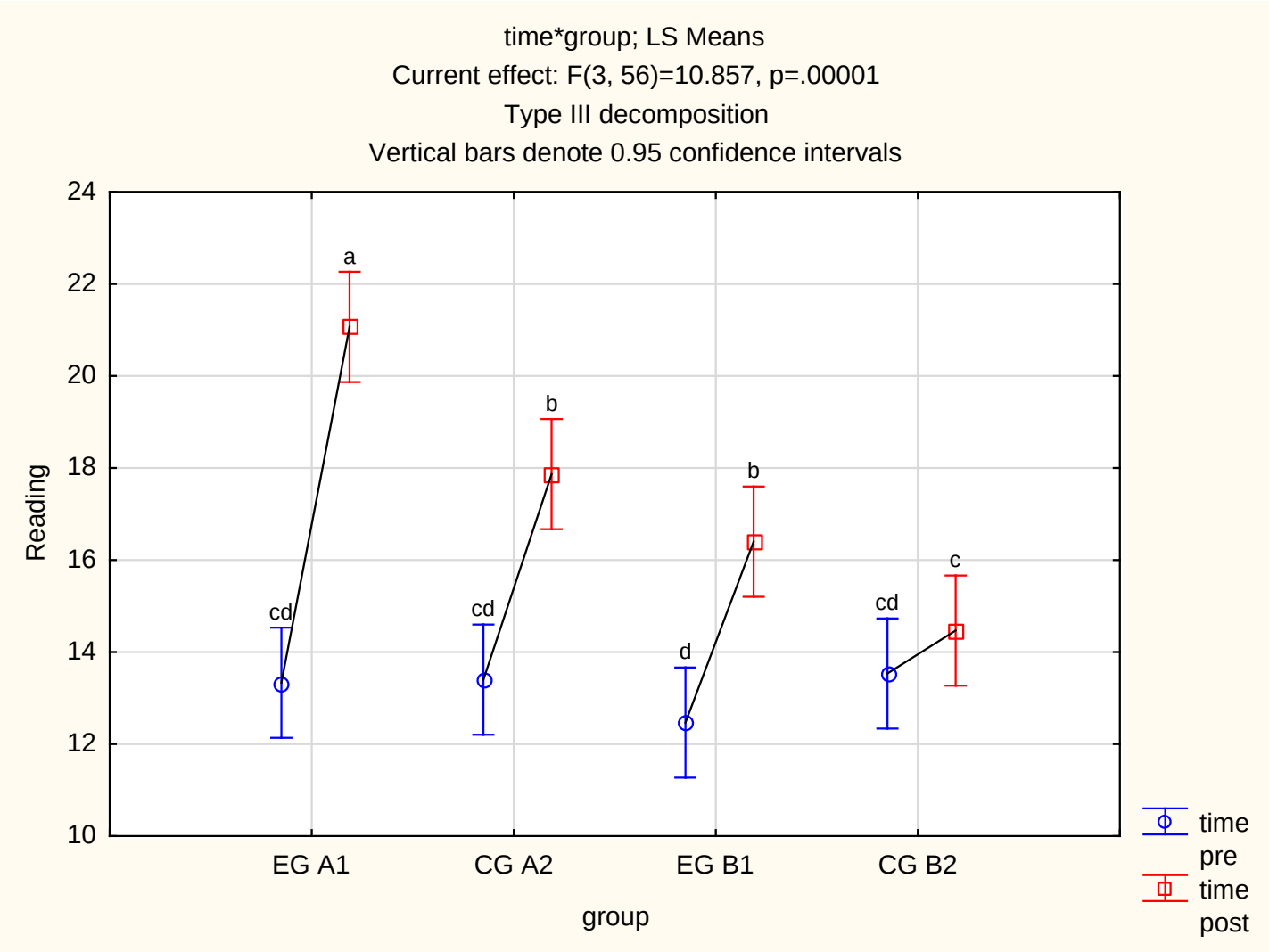
Findings: R & W



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Findings: Overall

Group	Pre-test			Post-test			Pre-test vs. Post-test (p-values)
	Range	Mean	Std. Dev.	Range	Mean	Std. Dev.	
EG A1 (n=15)	24 - 35	27.27	2.96	33 - 45	38.27	3.24	0.00
CG A2 (n=15)	23 - 33	27.27	2.49	31 - 39	34.47	2.29	0.00
EG B1 (n=15)	22 - 30	26.60	2.23	31 - 36	32.87	1.64	0.00
CG B2 (n=15)	21 - 37	27.33	3.66	20 - 31	29.67	2.72	0.02

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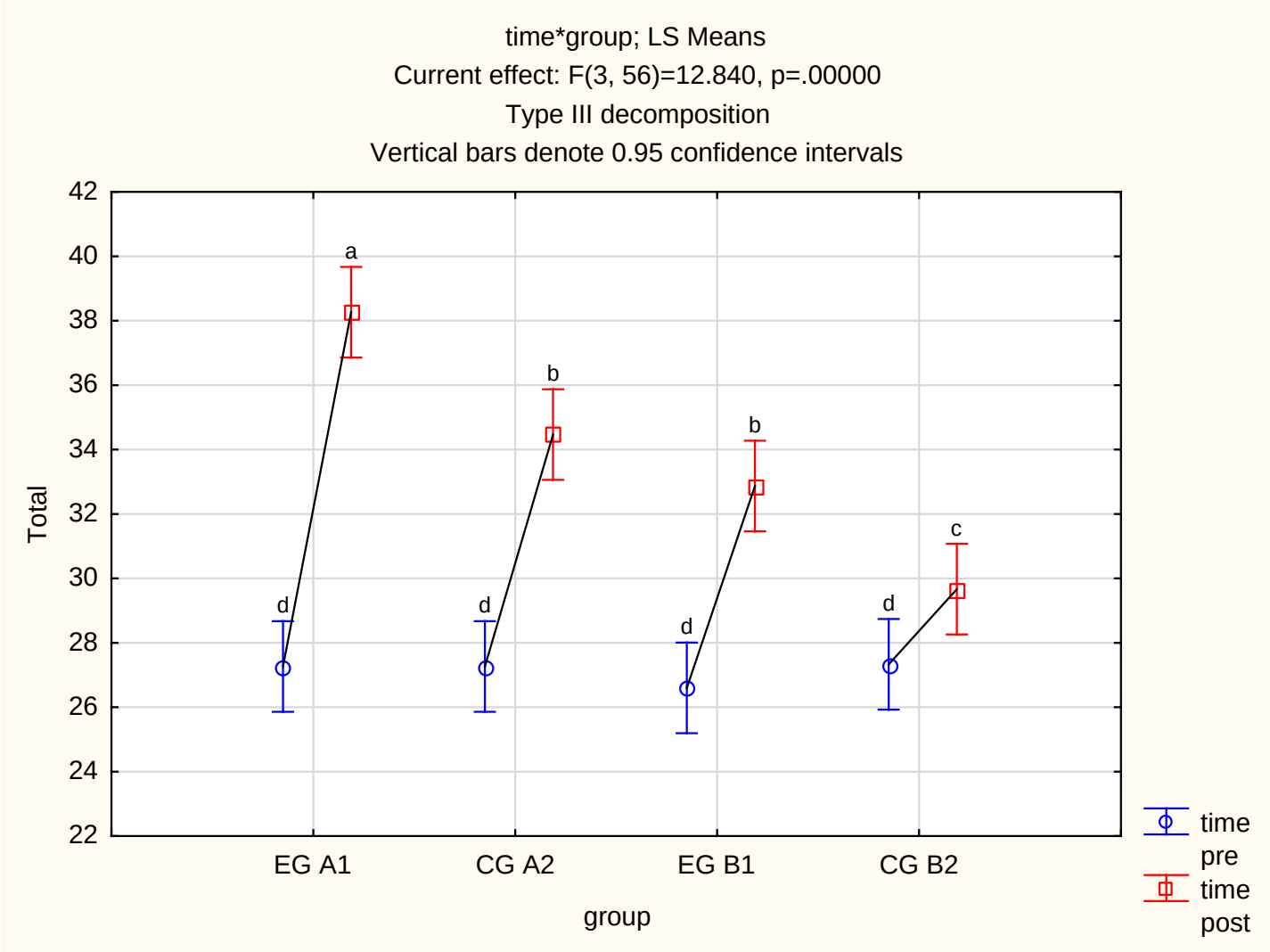
Findings: Overall



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Discussions and Conclusions

Sample groups	Proficiency levels at the beginning of experimental period (pre)	Proficiency levels at the end of experimental period (post)
EG A1	**Range:** 48 – 70% (Elementary proficiency plus, B1 - Limited working proficiency, B2) **M:** 54.54% (Elementary proficiency plus, B1)	**Range:** 66 – 90% (Limited working proficiency, B2 - Working proficiency plus, C1) **M:** 76.54% (Limited working proficiency, B2)
CG A2	**Range:** 46 – 66% (Elementary proficiency plus, B1 - Limited working proficiency, B2) **M:** 54.54% (Elementary proficiency plus, B1)	**Range:** 62 – 78% (Limited working proficiency, B2) **M:** 68.94% (Limited working proficiency, B2)
EG B1	**Range:** 44 – 60% (Elementary proficiency plus, B1 - Limited working proficiency, B2) **M:** 53.20% (Elementary proficiency plus, B1)	**Range:** 62 – 72% (Limited working proficiency, B2) **M:** 65.74% (Limited working proficiency, B2)
CG B2	**Range:** 42 – 74% (Elementary proficiency plus, B1 - Limited working proficiency, B2) **M:** 54.66% (Elementary proficiency plus, B1)	**Range:** 40 – 62% (Elementary proficiency plus, B1 - Limited working proficiency, B2) **M:** 59.34% (Elementary proficiency plus, B1)

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Discussions and Conclusions

- Based on the research participants' performance in the administered proficiency test, it was found that:
  - The use of MTLL following training has a significant positive effect on FL learners' proficiency.
  - The effect of the use of MTLL following specific training surpasses the effect of the use of MTLL without training, as well as the effect of the (increased) use of conventional language learning materials.
  - Regarding the effect of technologies on different types of proficiencies in the FL, MTLL contributed more on reading and writing proficiencies than on listening and speaking proficiencies.
- This presentation is part of an ongoing study. At the end of the study, by combining the findings from the quantitative (herein presented) and qualitative data (not presented), the conclusions and recommendations for integrating MTLL into FL and L2 pedagogy will be made.

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Dankie! Thank you! Danke!

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