

# The interplay between nonverbal and verbal interaction in synthetic worlds which supports verbal participation and production in a foreign language.

Le rapport entre le verbal et le non verbal dans des mondes synthétiques et son rôle de soutien pour la production et la participation verbales en langue étrangère.

16 novembre 2012

Soutenance de thèse de Ciara R. Wigham

## Membres du jury :

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# Working language

- Jury member
- European Project

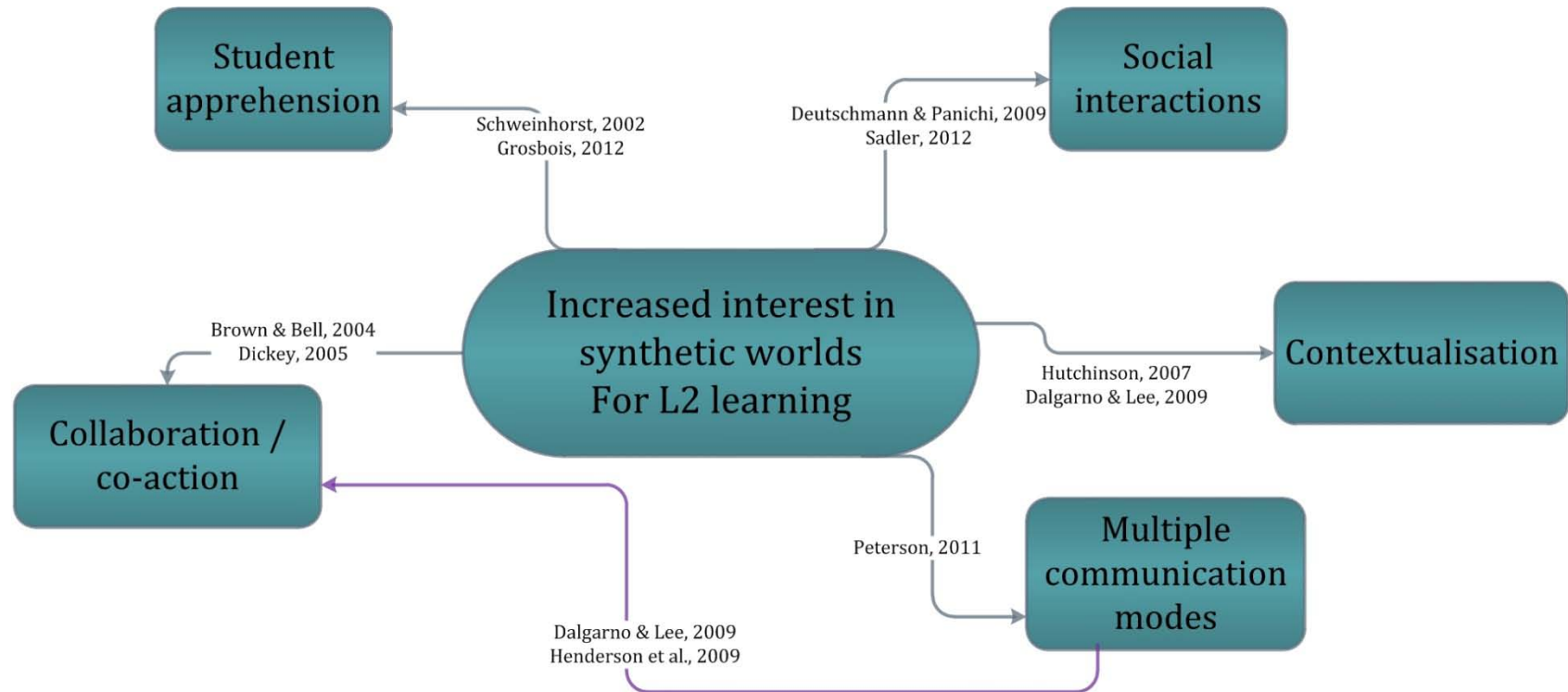
**‘Architectural and Design based Education and Practice through Content and Language Integrated Learning using Immersive Virtual Environments for 21st Century Skills’**



- Visibility of my research within professional communities:  
EuroCALL, CALL

# Introduction

# Research into synthetic worlds



- **Application of classroom approaches in the virtual space** (Zheng & Newgarden, 2012)
- **Current research**  
speculative, impressionistic nature, case-study approach

# Scientific context for the research

- **Increased attention to multimodality**
  - **Subject specific research (Halliday, 1994)**
    - inter-disciplinary collaboration
  - **Social change – developments in CMC (Jewitt, 2009)**
- **Role of nonverbal in face-to-face contexts (Stam & McCafferty, 2008; Tellier, 2009; Gullberg, 2012)**
- **Limited number of studies that explore multimodality in synthetic worlds**
- **Lack of established methodology**

# Research questions

## Interplay between verbal and nonverbal modes

1A: During a collaborative building activity, are nonverbal acts autonomous in the synthetic world or does interplay exist between the nonverbal and verbal modes?

1B: Do nonverbal acts of communication play the same role as in face-to-face communication?

1C: How are nonverbal and verbal acts distributed during a collaborative building activity?

## Role of nonverbal in identity construction

2A: Do students construct inworld identities using the nonverbal mode?

2B: Does interplay exist between the students' use of the nonverbal mode for inworld identity construction and their L2 verbal interaction and participation?

## Interplay between textchat and voicechat modalities

3A: Is there the place for textchat to play a role in the communication in synthetic worlds or does the textchat act only in adjunct to the voicechat, considering it is equally in competition with several nonverbal modalities?

3B: What stance do the tutors adopt *vis-à-vis* the textchat? Do they accord importance to this modality, amongst the others, or not?

3C: What is the role that the textchat plays in terms of discourse functions?

3D: Can the textchat serve for feedback provision?

3E: If the textchat is used for feedback, what type of errors are corrected and what feedback strategies are used?

3F: Do students respond to feedback in the textchat? When, and in what modality, will responses occur?

Support for L2 verbal participation and production



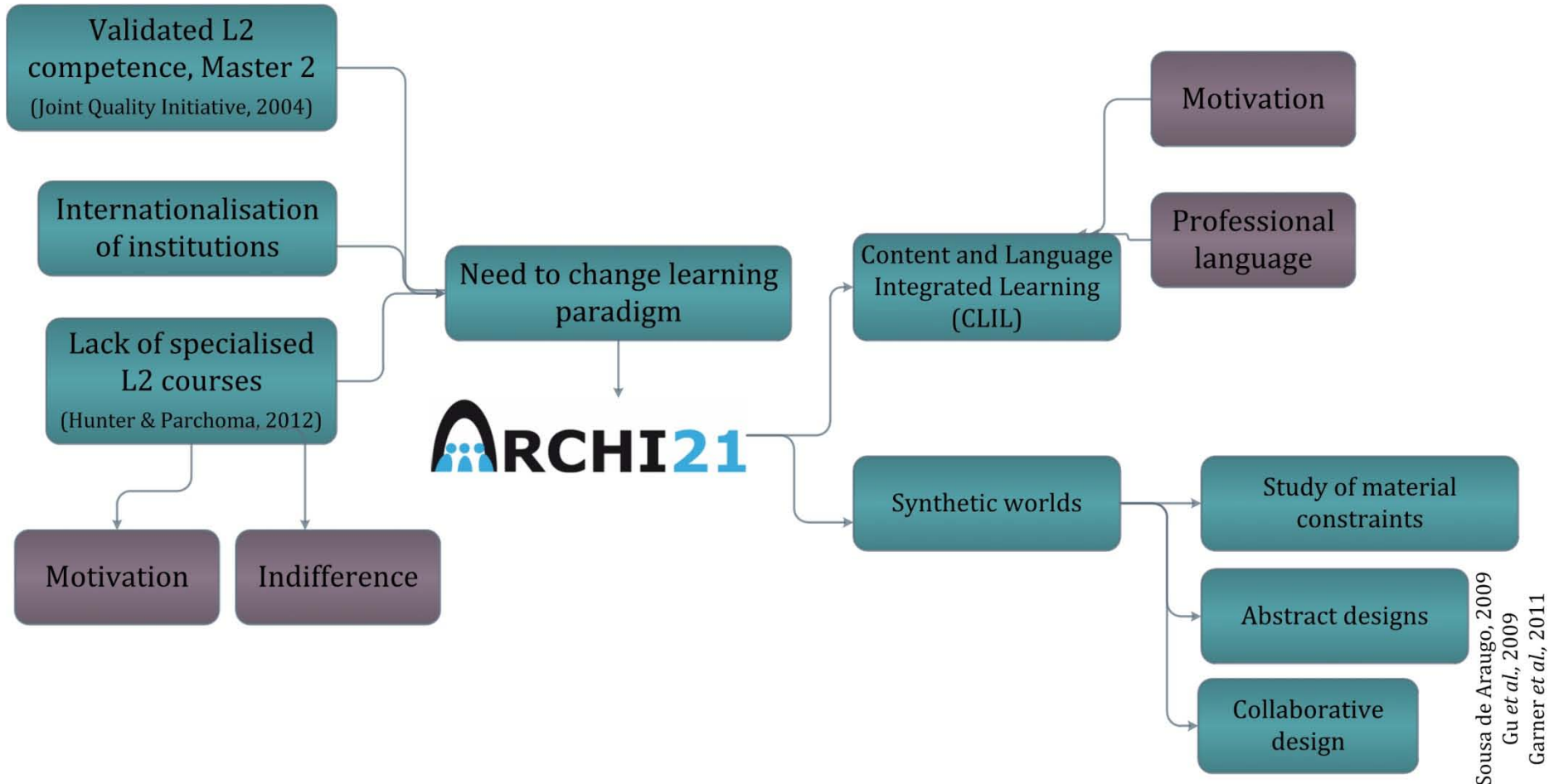
# Plan

1. Pedagogical context of study
2. Pedagogical scenario design
3. Methodology
4. Two examples of analyses performed
  - 4.1 Nonverbal and verbal: proxemics
  - 4.2 Textchat and voicechat interaction: feedback
5. Thesis contributions
6. Perspectives

# 1. Pedagogical context of study



# 1 Language needs in architecture



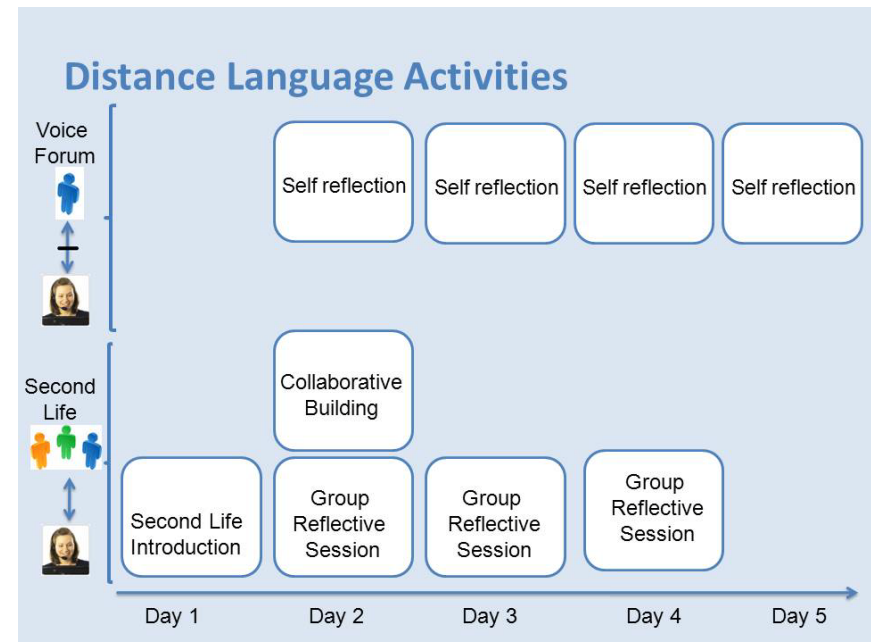
## 2. Pedagogical scenario design

## 2.1 Chosen pedagogical approach

- **Studio /workshop approach** (cf. Geology domain & Perkins, 2012)
  - Learning-by-doing
  - Collaboration
  - Problem brief
  - Activities build on each other
  - Explore ideas, generate and evaluate alternatives (Gross & Do, 1998)
  
- **Architecture teacher's role**

## 2.2 Pedagogical Scenario

- Intensive five-day studio, Feb. 2011
- L2 learning integrated into existing studio pedagogical approach using CLIL
- Hybrid course
- Problem brief – creation of an inworld model
- (FFL, A2-B1, EFL, B1-B2)



## 2.3 My personal contributions

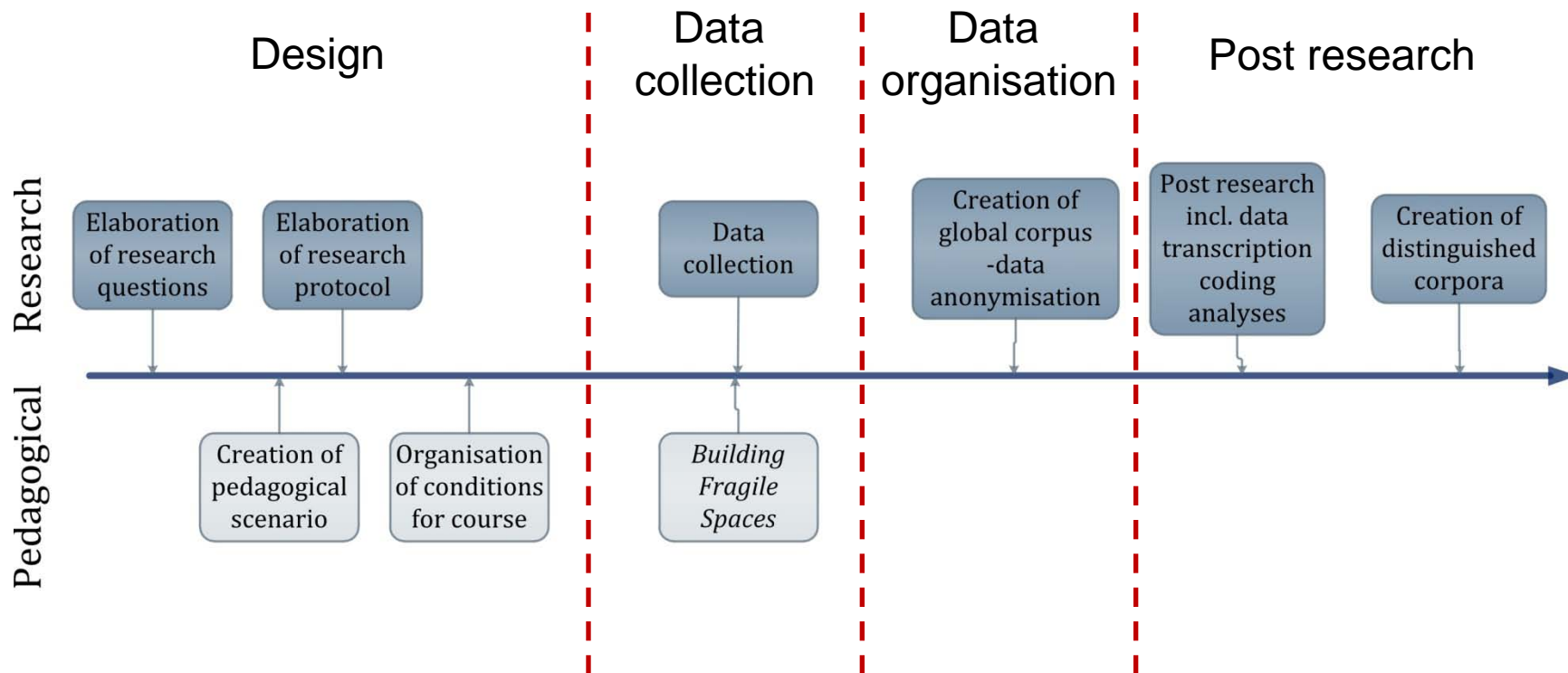
- Design of CLIL activities – L2 objectives
- Exploit *Second Life* affordances in activity design

Activity	Architecture objectives	L2 objectives	SW affordances
<b>Introduction to Second Life</b>	Introduce students to multimodal nature of SL	Establish a communication protocol	Multiple communication modes (Peterson, 2011)
<b>Collaborative building activity</b>	Introduce students to building techniques to aid them develop their model	Develop L2 communication techniques concerning the referencing of objects	Learning by building (Lim, 2009) Collaboration (Dalgarno & Lee, 2009)
<b>Group reflective session</b>	Develop critical thinking by negotiation  Distinguish pertinent information for overall problem identification in their design brief	Help students to skill-up their L2  Acquire domain-specific vocabulary  Develop a professional discourse	Social interactions (Deutschmann & Panichi, 2009)

- Visualisation of learning design using *MotPlus*

# 3. Methodology

# 3.1 Research protocol



## 3.2 Data collection and coverage

pre-course

during course

post-course

Data collected	Pre-questionnaires	Session data		Post questionnaires	Semi-directive interviews
<b>Environment</b>	Kwiksurveys	<i>Second Life</i>	<i>VoiceForum</i>	Kwiksurveys	Skype
<b>Data type</b>	Spreadsheet file	Video screen captures	Audio recordings	Spreadsheet file	Audio recordings
<b>Quantity &amp; coverage of data</b>	17 student questionnaires	20 group sessions & 2 presentation sessions 19h40m	64 forum messages	16 student questionnaires	5 student interviews  2h30
<b>Multimodal Transcription</b>		7 sessions 5h15m 2238 verbal 2659 nonverbal			



## 3.3 Relationship between quantitative and qualitative approaches

- Early stages of research into multimodal pedagogical communication in synthetic worlds
- Steps in my approach
  - Qualitative review of data – pertinence of research questions
  - Quantitative analysis to determine whether pedagogical contract met, whether scenario was ‘acted’
    - ↓ precondition
    - qualitative /mixed methods in analysis

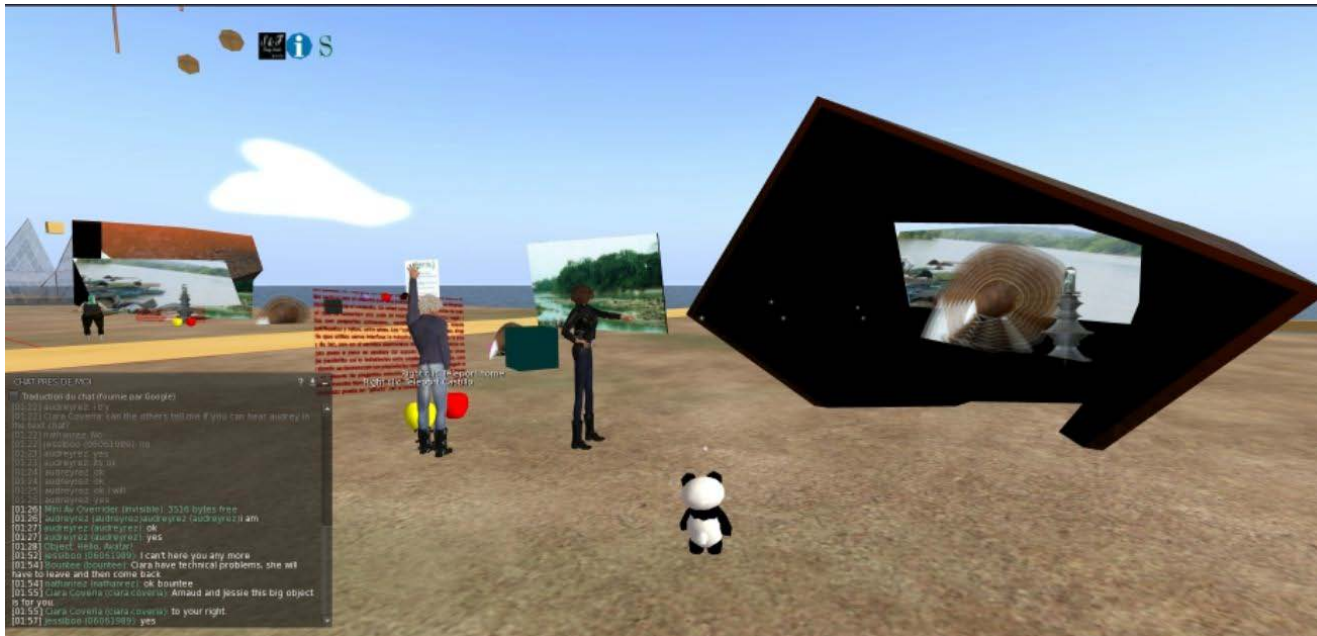
# 4. Analyses

4.1 Nonverbal and verbal: proxemics

4.2 Textchat and voicechat interaction: feedback

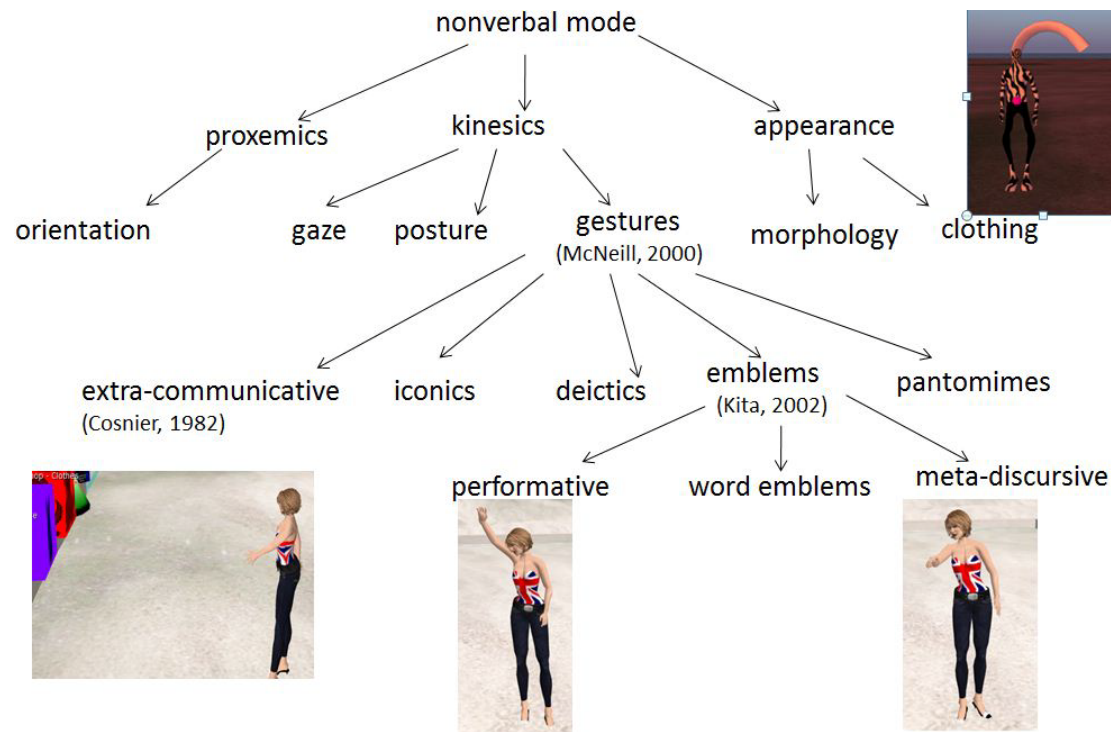
# 4.1 Interplay nonverbal & verbal

- 1A: During a collaborative building activity, are nonverbal acts autonomous in the synthetic world or does interplay exist between the nonverbal and verbal modes?



## 4.1.2 Characterisation of *SL* modalities

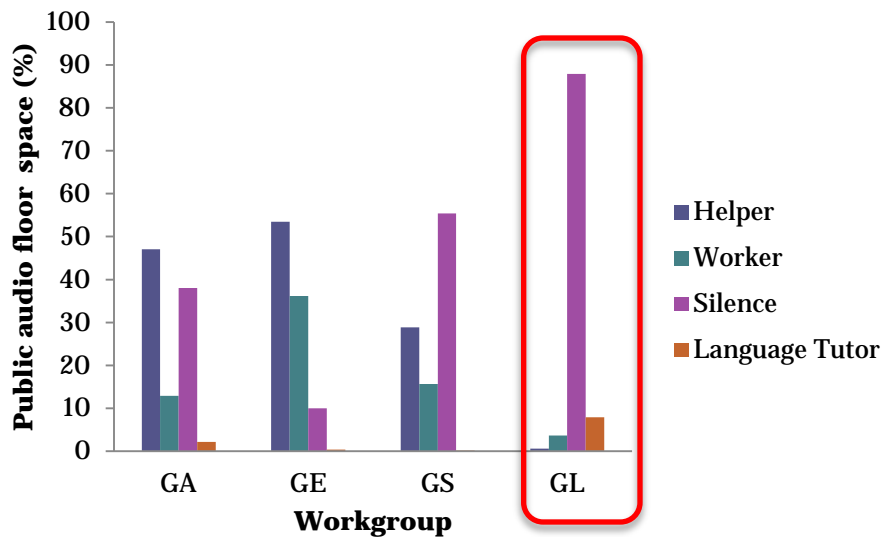
- Literature review of classifications of nonverbal mode used in SLA & CSCW domains
- Classification of verbal & nonverbal modalities in *Second Life*



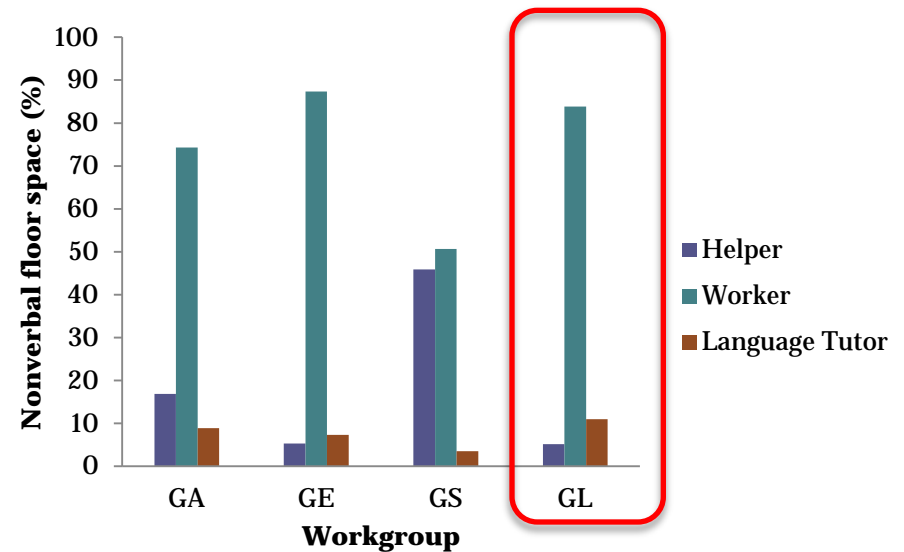
- Elaboration of transcription methodology

# 4.1 Data coverage to answer RQ1.1

- 4 screen recordings
- Subgroups of the four workgroups (2 FFL, 2 EFL)
- 1h40m of screen recordings



verbal



nonverbal

## 4.1 Overview results proxemic modality

- **Non-transfer of proxemic norms**



- **Choice of verbal modality**
  - Adapted to environment
  - Impact on building possibilities
- **Quantity of verbal participation**
- **Change in verbal floor space dynamics**
  - Verbal mode to manage proxemic organisation
- **Impact on activity achievement & collaboration**

## 4.2 Interplay textchat & voicechat

- 3D: Can the textchat serve for L2 feedback provision?

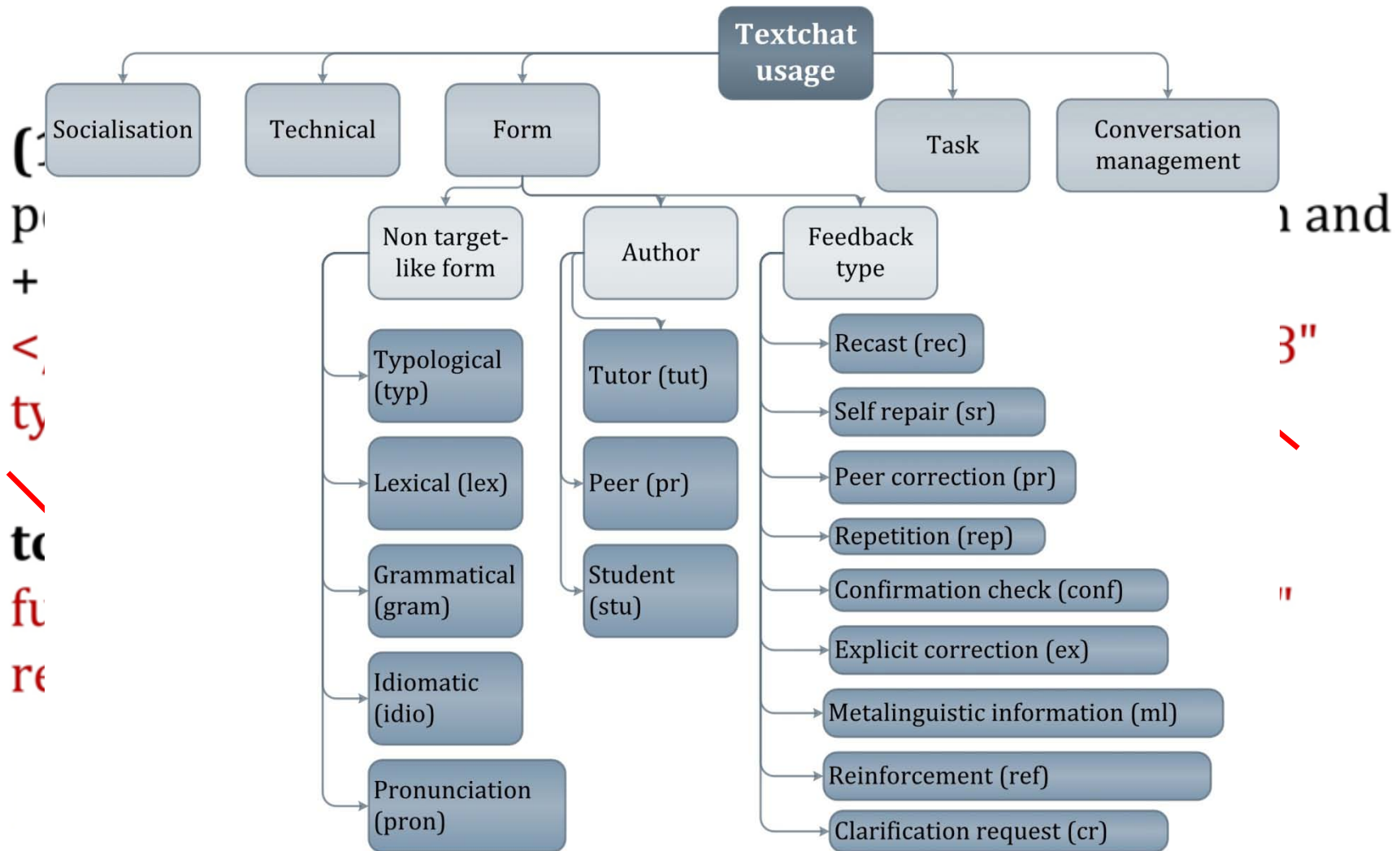


## 4.2 Interplay between textchat & voicechat

- **Textchat modality acts in adjunct to the audio modality**
  - e.g. technical problems exist, opening & closing sequences of sessions (Liddicoat, 2011; Palomeque, 2011)
- **Monomodal textchat environments – auto-correction, negotiation of meaning and corrective feedback**
- **Learner overload** (Deutschmann & Panichi, 2009)
- **Multimodal environments ?**



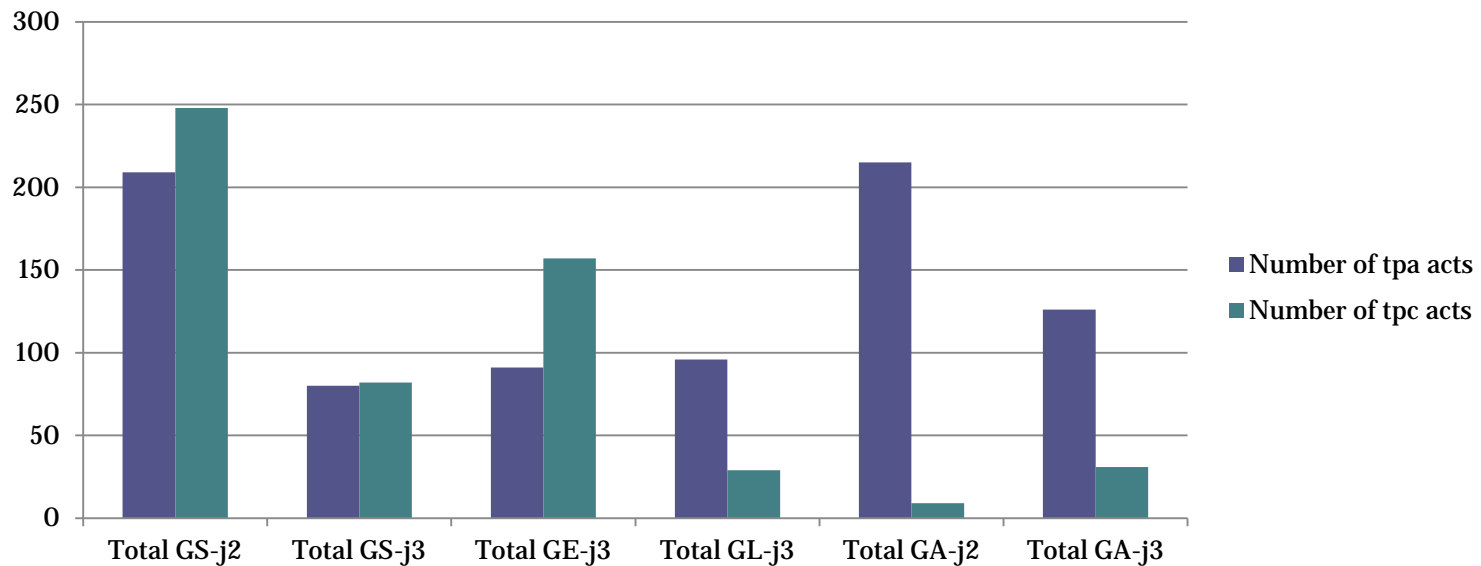
# 4.2 Characterisation of textchat functions



## 4.2 Data coverage

- 6 sessions (3 FFL, 3 EFL)
- 4h30m of screen recordings

Groups analysed	Audio acts	Textchat acts
EFL	450	423
FLE	386	64

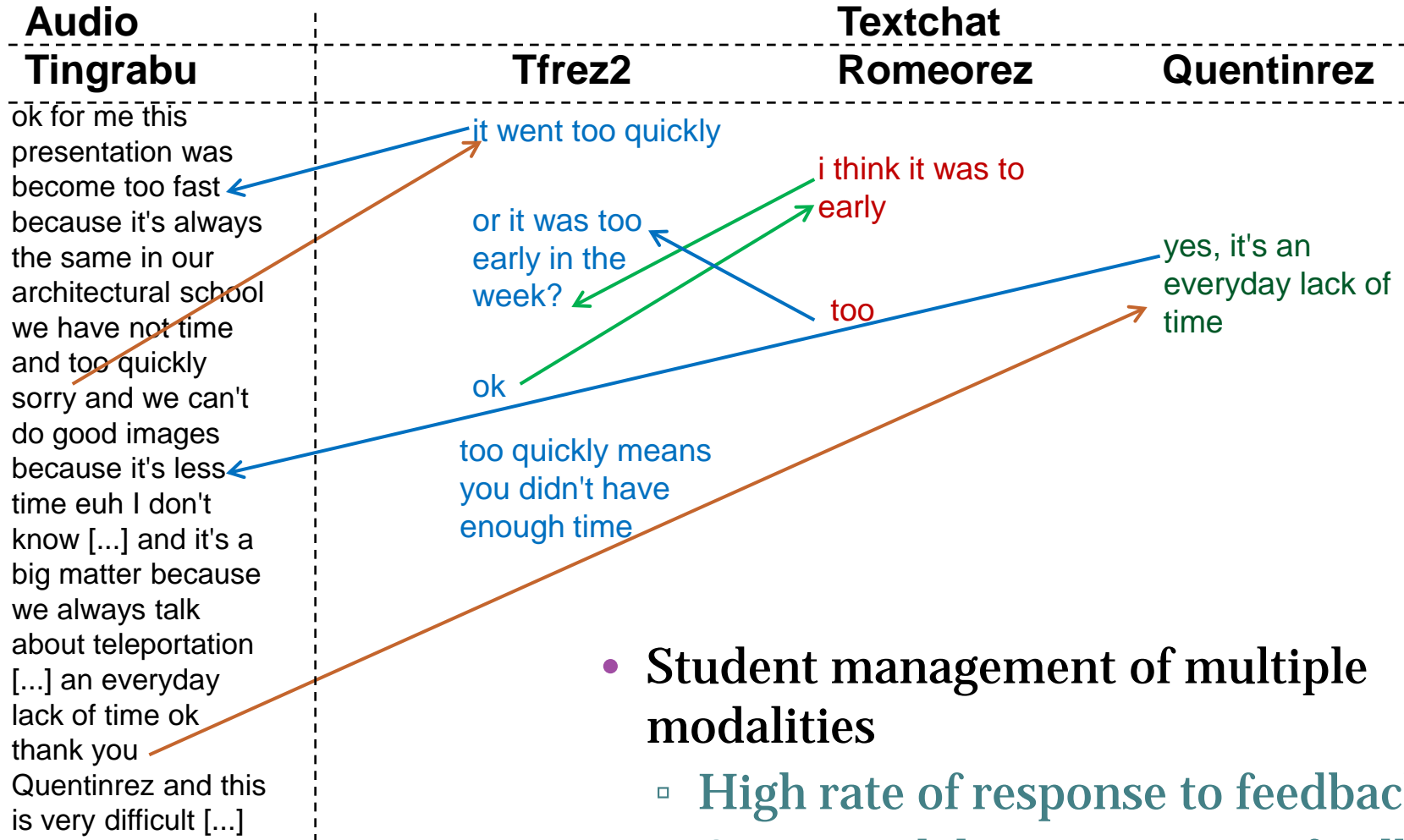


## 4.2 Results of feedback in textchat

EFL Session	Technical	Socialisation	Conversation management	Task	Form
Es-j3	3	7	9	41	17
Sc-j2	26	5	7	76	16
Sc-j3	2	9	4	36	16

- 17% of acts contain feedback (49 acts)
- Primarily concerns lexical and grammatical non target-like forms (cf. Tudini, 2003)
- Predominant use of recasts (32/49 instances)

## 4.2 Sample interaction



- Student management of multiple modalities
  - High rate of response to feedback
  - Cross modality response to feedback
  - Peer feedback

## 4.2 Results of textchat feedback study

- EFL tutor's strategic choice to use textchat - reduces cognitive load
  - Non expertise in content matter
- Language form Vs communicative meaning
  - Recasts as remain in textchat window
  - Recasts so as not to interrupt content communication
- Students' management of multiple modalities

# 5. Thesis contributions

## 5.1 Thesis contributions - Pedagogical leads

- **Need to increase awareness of nonverbal mode:**

- □ proxemic organisation increase verbal participation, aid collaboration
- length of verbal acts
- support during verbal difficulties (object orientation, position) to enhance collaboration
- avatar personalisation aids verbal participation

- **Training to use textchat modality in parallel with audio:**

- tutors' attitude affects learners usage
- participation equalisation – learner preferences
- □ importance to linguistic form and communicative meaning
- □ address imbalance between correcting content knowledge and language production in CLIL situations

## 5.2 Thesis contributions for future research

- **Provided a framework from which to study multimodal pedagogical interaction within synthetic worlds**
  - Typology of communication modes and modalities
  - Transcription methodology
  - Comparative studies
  
- **LETEC corpora**
  - Exploited only part of the data
  - Cumulative analyses
    - including by researchers external to project
    - richer view of multimodal pedagogical interactions



## 6. Perspectives

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- **'Training Corpora' as open educational resources**
  - Technical training concerning environment
  - Lack of pedagogical training
  
- **Interplay between textchat and nonverbal mode**
  - Role of nonverbal in lexical searches (trigger) (Kida & Faraco, 2003)
  - Structured data → facilitate cumulative analysis

# Thank you!



# Publications

## Conference presentations

## Articles / Book chapters

2011

2012

in press

Wigham, C.R. & T. Chanier (2011). Collaboration en langue étrangère dans une approche de type EMILE articulant modes verbaux et gestuels dans le monde virtuel Second Life. **EPAL**.



Wigham, C.R. & A. Bayle (2012). Enjeux, outils et méthodologie de constitution de corpus d'apprentissage. **COLDDOC 2012**.



Wigham, C.R. & T. Chanier .A study of verbal and nonverbal communication in Second Life - the ARCHI21 experience. **ReCALL** 25(1).



Wigham, C.R. & T. Chanier (2011). Object-focused collaboration in Second Life : the use of verbal and gestural modes for the establishment of common ground and in deictic referencing. **EuroCALL**.



Wigham, C.R. & T. Chanier (2012). Interactions between text chat and audio modalities for L2 communication in the synthetic world Second Life. **15th International CALL Research Conference**.



Wigham, C.R. & Chanier, T. Architecture students' appropriation of avatars - relationships between avatar identity and L2 verbal participation and interaction, in Lamy, M-N. & Zourou, K. (Eds). **Social Networking and Language Education**. Palgrave MacMillan.



Foucher, A.L., Chanier, T., Rodrigues, C., Fynn, J., Bayle, A. & C.R. Wigham (2011). What learning scenarios for virtual worlds and CLIL ? **EuroCALL**.



Wigham, C.R. & T. Chanier (2012). Appropriation des avatars par des étudiants d'architecture et impact sur l'interaction. **ACEDLE**.



Rodrigues, C., Wigham, C.R., Foucher A-L., & Chanier, T. Architectural design and language learning in Second Life, in Gregory, S., Lee M.J.W., Dalgarno, B. & Tynan, B. (Eds.) **Virtual Worlds in Online and Distance Education**. Athabasca University Press.



Rodrigues, C. & C.R. Wigham (2012). Second Life et apprentissage d'une langue étrangère dans une approche Emile : quels apports d'un environnement synthétique pour l'apprentissage du vocabulaire ? **ACEDLE**



## Deposit of Corpora

Chanier, T. & Wigham, C.R. (2011). (Dir.) *Learning and Teaching Corpus (LETEC) of ARCHI21*. **Mulce.org** : Clermont Université.

Wigham, C.R. & Chanier, T. (2012). (Dir.) *Distinguished Corpus : Influence of nonverbal communication on verbal production in the Second Life Reflective Sessions*. **Mulce.org** : Clermont Université.