


LIDILEM

 UNIVERSITÉ
Grenoble
Alpes

Mathieu Loiseau

Issues and strategies of game design for language learning

Game and learning

- Why “play”?
 - Examples of good pedagogy (Gee, 2003)
 - Learner centered (Oblinger, 2004)
 - Active learning (Oblinger, 2004)
 - Social learning (Oblinger, 2004)
 - Motivation (Oblinger, 2004)
 - Favorable disposition towards games (Papastergiou, 2009)
 - Error (Mariais, 2012 : 48)
 - More distance
 - Risk taking
 - In language learning
 - “task” compliant (Cornillie, Thorne et Desmet, 2012)
 - Fuels interaction (in/around the game)
(cf. E facet in ESAR classification)



But...

- Le Gorafi, [23/05/2014](#)
 - “*Learning while having fun is not fun for 80% of children*”

- “Le Gorafi”, french equivalent of “The onion” 😊

But...

 Le Gorafi

« Apprendre en s’amusant » ne serait pas amusant pour 80% des enfants interrogés

« Apprendre en s’amusant » ne serait pas amusant pour 80% des enfants interrogés

89 Société Publié le 23/05/2014 par La Rédaction


 13
partages

 Partager

 Tweeter

Coup dur pour le monde des jeux éducatifs. Les résultats d’une étude du NEC (National Entertainment Center) viennent de tomber, et ils sont édifiants. En effet, sur les 1058 enfants interrogés, 850 ne se sont pas déclarés divertis par les produits qu’ils ont essayés pour les besoins du test, et une seule conclusion s’impose alors, selon Gordon Stason, l’expert chargé de l’étude : « Apprendre en s’amusant n’est pas amusant du tout ».

...reluctances and critiques

- « Chocolate coated broccoli » (Söbke, Bröker et Kornadt, 2013; Bruckman, 1999)
 - « À l'issue de ce travail, nous pointons la faible pertinence du concept de *serious game* : vouloir mêler des fonctions contradictoires telles que le plaisir ludique et l'effort du travail ou de l'apprentissage est un objectif qui nous paraît difficile à tenir. » (Lavigne, 2013:120)
- Lack of empiric evidence of the effect of games (Girard, Ecalte, and Magnan 2013; Jong, Lee, and Shang 2013)
 - Control groups
 - Longitudinal studies
 - Game access

Game and language learning

Theory review

Are broccolis games?

Defining games (in French)

- Le jeu est une **activité**
 - Libre ;
 - Séparée ;
 - Incertaine ;
 - Improductive ;
 - Réglée;
 - Fictive. (Caillois, 1958:80)
- « [a] game is a **system** in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome. » (Salen & Zimmerman, 2004:80)

Informal definition



Merci Dorian — Le game design
<http://www.nesblog.com/dodo-moto/>

jeuxvideo.com

A formal definition?

- « A good rule of thumb for determining the degree to which a CALL activity is a game, then, is the degree to which students want to play it for the pleasure it brings rather than for some external reason. What a teacher or courseware designer calls an activity is not important; it is how the learner views it that will determine whether it is used as one. » (Hubbard, 1991:221) cité par (Cornillie *et al.*,2012:249)
- « je refuserais de répondre à la question “Est-ce (ou non) un jeu ?” au profit de la question “En quoi cela peut-il être un jeu ?” » (Brougère, 2012:122-123)
- In which conditions does an “innovation” function, and why?
(Bétrancourt, 2011, 3; Jong, Lee, and Shang 2013, 5)

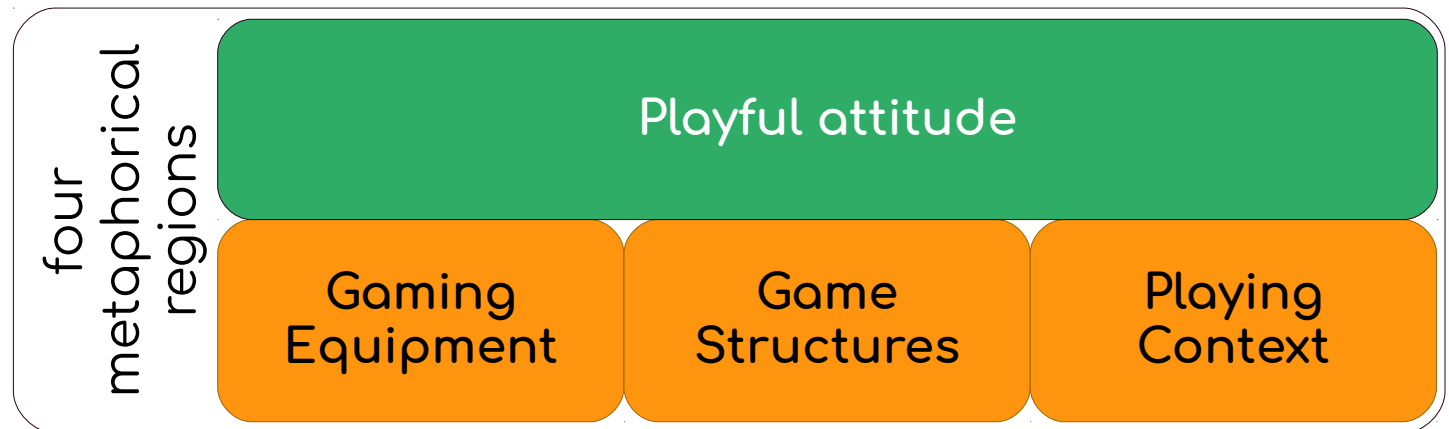
Playful attitude (Henriot, 1989)

- « cette attitude ambivalente faite à la fois de distance et d'implication » (Silva 2008, 18)
- Comparable to *flow* (Nakamura et Csikszentmihalyi, 2002)
- Valued as a pedagogical tool (Kiili, 2005:14 ; Silva, 2008:18)
 - [Le] cours de langue ressemble bien plus à la pratique d'un sport qu'on ne le croit. Dans un sport, il faut moins se regarder comme dans une glace, moins s'occuper de son image ou de ses craintes et plus se focaliser sur ce que l'on fait, sur les mesures à prendre pour atteindre des objectifs. Parce que le jeu peut être absorbant et stimulant, il permet de déplacer l'attention de soi vers ce que l'on fait et par conséquent, il présente de nombreux avantages pour les apprentissages (Villez, 2006:51).

Conceptual tool

Metaphorical regions of “jeu”

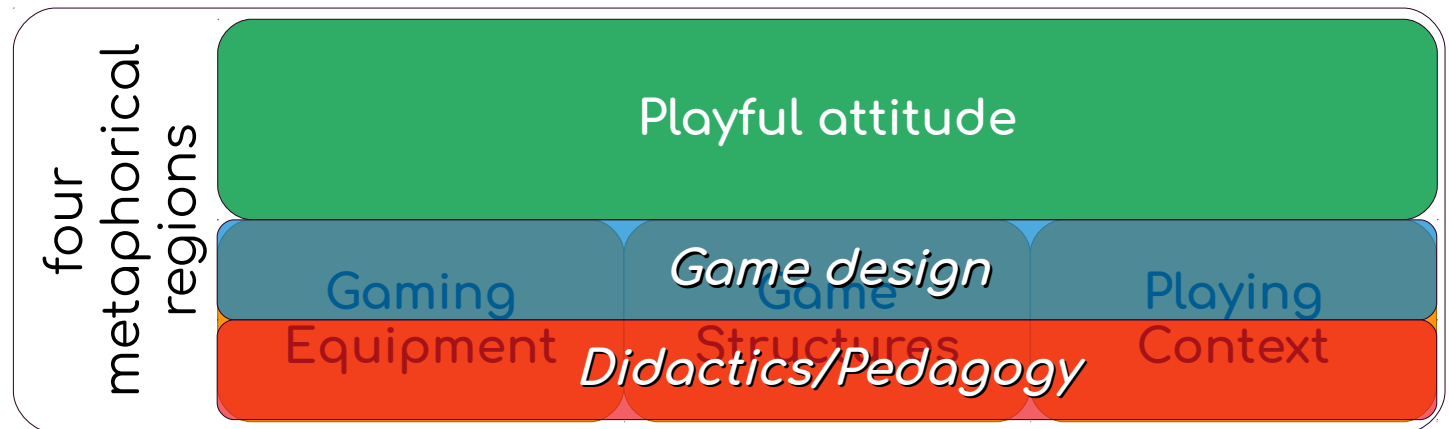
- How to “ludicize” (Genvo, 2013:445; Bogost, 2014) learning? (Silva, 2008)



Conceptual tool

Metaphorical regions of “jeu”

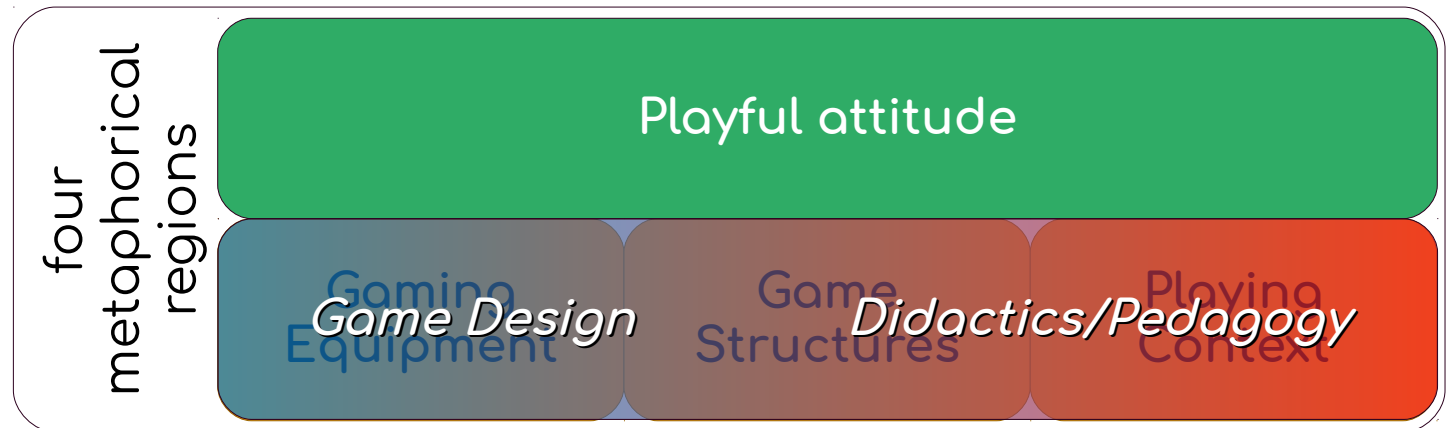
- How to “ludicize” learning? (Genvo, 2013:445; Bogost, 2014) (Silva, 2008)



Conceptual tool

Metaphorical regions of “jeu”

- How to “ludicize” learning? (Genvo, 2013:445; Bogost, 2014) (Silva, 2008)





Conceptual tool

Rule levels

- Rule levels (Silva, 1999 : 277)
 - *Metaludic* rules underlie the design of a game;
 - *Constitutive* rules are formulated as rules of the game;
 - *Normative* rules describe the activity of a good player;
 - *Evolutionary* rules emerge through usage.

Game design for language learning

What's at play?

Means and case studies

Towards a design strategy

- Issues:
 - High costs
 - COTS : 1 to 10 M\$, 20 to 150 year.man (Becker, 2007:4)
 - *Casual Games* : 150 k\$ to 1 M\$ (successful > 500 k\$)
 - Difficulty to provoke playful attitude
 - « Le jeu est une réalité double qui articule une structure ludique (l'aspect *game* ou *gameplay*) et une attitude ludique (le *play*) » (Brougère, 2012:127)

Strategies

- Costs
 - Agility
 - Limit gaming equipment costs (graphics, metaphor, in the first iterations)
 - Based on generic language resources
- Playful attitude
 - Reuse game structures that work in a purely “playful” context (Söbke, Bröker et Kornadt, 2013)

Case study

Any (utf-8)
written
language

Game of Words

A riddles game

http://wiki.lezinter.net/index.php/Projets:Game_of_Words

<http://gameofwords.lezinter.net/>

Riddles games

- *Metaludic* rules (Silva, 1999)
 - A player/team has information (word, idiom, concept, person...);
 - Another player/team has to find that information;
 - There are precise modalities to transmit the information.
- Various *constitutive* rules
 - *Time's up*
 - *20 questions/yes and no*
 - *Draw something*
 - *Concept*
 - *Taboo*

Strategic competence

- “verbal and non-verbal communication strategies that may be called into action to compensate for breakdowns in communication due to performance variables or to insufficient competence” (Canale & Swain, 1980, p. 30)
- “the ability to get his message across in spite of the limitations of his interlanguage” (Schmidt, 2012:28)
- “awareness of communication strategies and the subsequent willingness to use these strategies in order to communicate in an exolingual situation of communication.” (Pichon et al., 2013:43)
- “The ways which help people communicate in the presence of such deficiencies[, communication strategies] are inevitable in oral communication for language learners. These strategies keep speakers flexible, and confident, and make their communication more effective.” (Moattarian & Tahririan, 2013:22)
- 2 strategy categories
(CECRL, 2000, sect. 4.4.1.3; Dörnyei & Thurrell, 1991, p. 18; Mariani, 1994, p. 147)
 - Message adjustment
 - Resource expansion

Game of Words

- Riddle game ;
- Lexicon with focus on:
 - Semantics
 - Communication (through **asynchronous** interactions)
- User Generated Content
 - **Any language that can be written with utf-8 characters**
- Basic adaptation of level using the number of forbidden words and the risk taken (points)
- 3 roles inspired by mythologies:
 - Oracle
 - Druid
 - Augur

Gameplay (1/6)

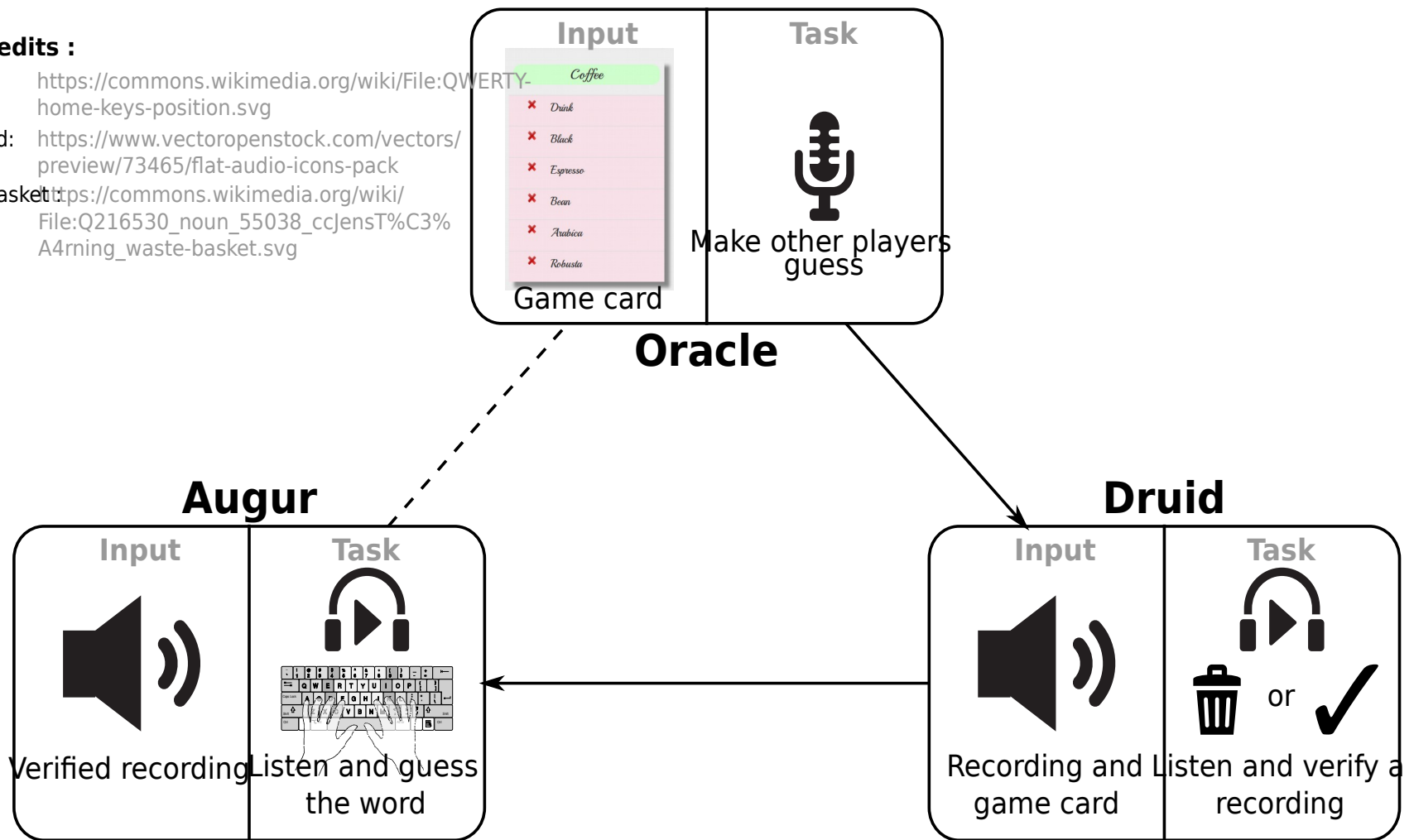
Global view

Image credits :

Audio : <https://commons.wikimedia.org/wiki/File:QWERTY-home-keys-position.svg>

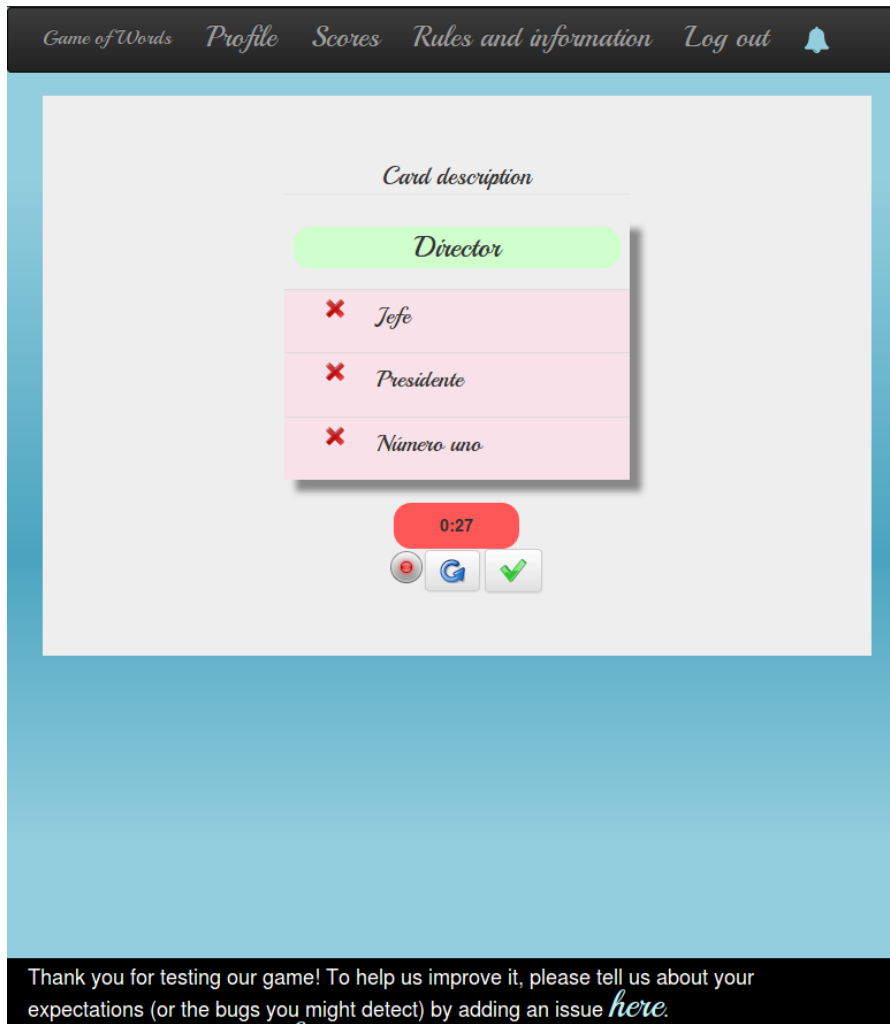
Keyboard: <https://www.vectoropenstock.com/vectors/preview/73465/flat-audio-icons-pack>

Waste basket: https://commons.wikimedia.org/wiki/File:Q216530_noun_55038_ccJensT%C3%A4rning_waste-basket.svg



Gameplay (2/6)

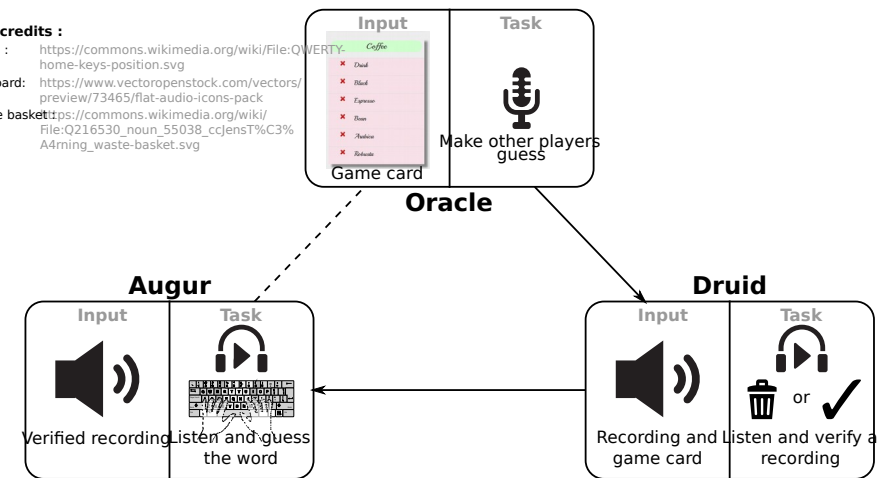
Oracle



Oracle

Image credits :

- Audio : https://commons.wikimedia.org/wiki/File:QWERTY_home-keys-position.svg
- Keyboard: <https://www.vectoropenstock.com/vectors/preview/73465/flat-audio-icons-pack/>
- Waste basket: https://commons.wikimedia.org/wiki/File:Q216530_noun_55038_cjensT%C3%A44ming_waste-basket.svg



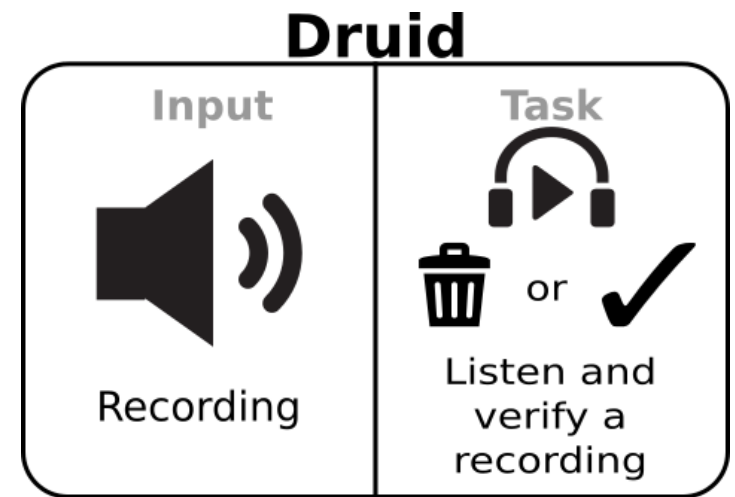
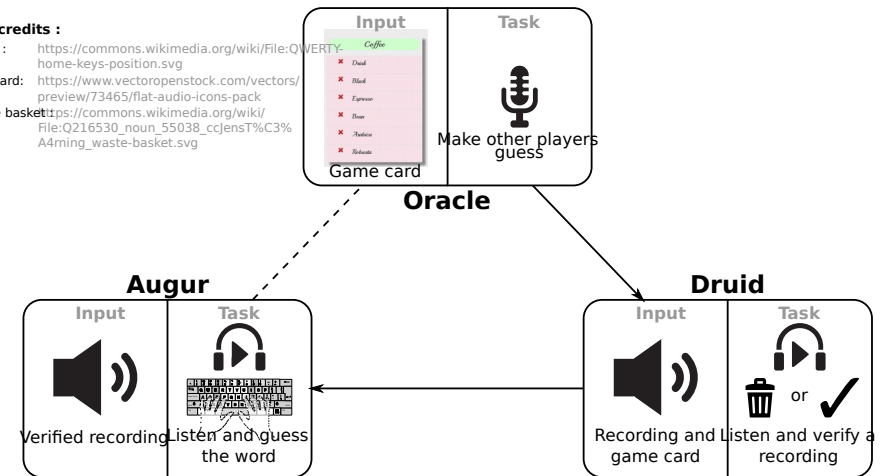
Gameplay (3/6)

Druid



Image credits :

Audio : https://commons.wikimedia.org/wiki/File:QWERTY_home-keys-position.svg
 Keyboard : <https://www.vectoropenstock.com/vectors/preview/73465/flat-audio-icons-pack>
 Waste basket : https://commons.wikimedia.org/wiki/File:Q216530_noun_55038_cjensT%C3%A4rning_waste-basket.svg



Gameplay (4/6)

Augur

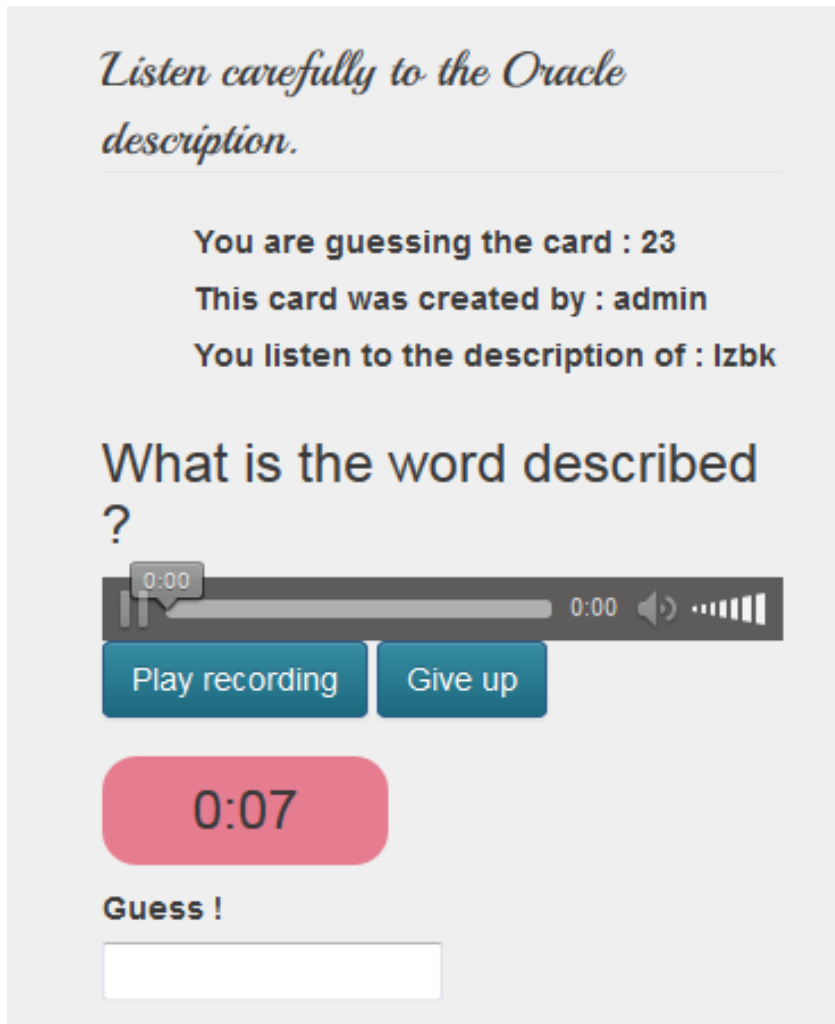
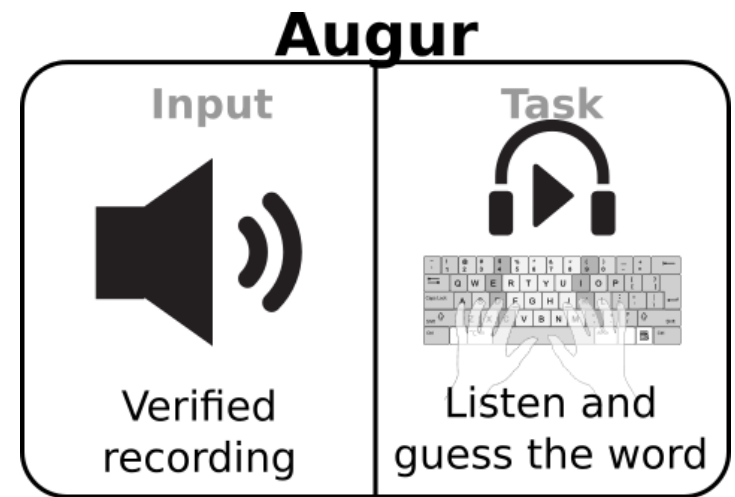
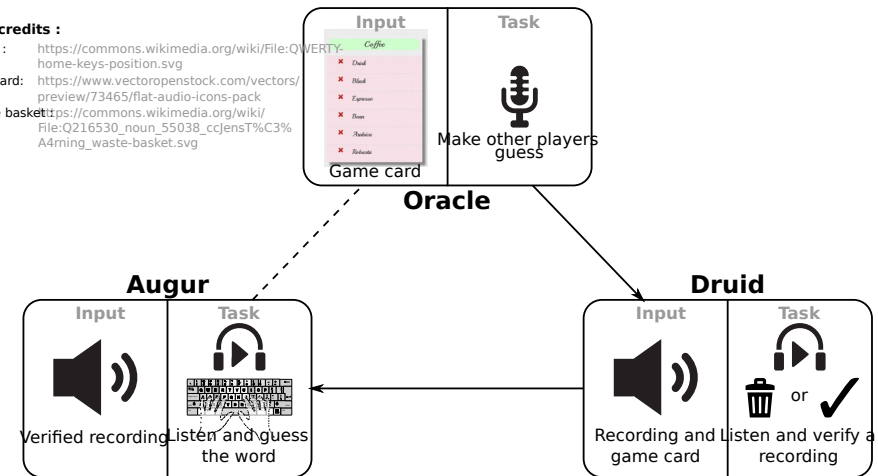


Image credits :

- Audio : https://commons.wikimedia.org/wiki/File:QWERTY_home-keys-position.svg
- Keyboard: <https://www.vectoropenstock.com/vectors/preview/73465/flat-audio-icons-pack>
- Waste basket: https://commons.wikimedia.org/wiki/File:Q216530_noun_55038_cjensT%C3%A4rning_waste-basket.svg



Gameplay (5/6)

Druid

- Content creation

Card Creation

Word to Find

CEFRL level associated to the word (not taking the forbidden words into account):
A1 ▾

Select your subject or create a new one
Sports

Taboo

Add a taboo word

Remove a taboo word

Reset

Validate

[Game of Words](#)
[Profile](#)
[Scores](#)
[Rules and information](#)
[Log out](#)
 11

[Global rankings](#)
[Anglais](#)
[Espagnol](#)
[Français](#)

Rankings	Player	Oracle Score				Druid Score				Augur Score				Global score
		Forfeits	Err.	Desc.	Win %	Score	Arbitrations	Arbitration err.	Created cards	Score	Games	Win %	Score	
1	admin	0	0	0	0	0	6	0	0	150	0	0	0	150
2	lzbk	1	0	6	0	37	0	0	0	0	0	0	0	37
3	zuleima	0	0	0	0	0	0	0	0	0	0	0	0	0
4	angelle	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Dam22	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Yoda	0	0	0	0	0	0	0	0	0	0	0	0	0
7	alatielxxx	0	0	0	0	0	0	0	0	0	0	0	0	0
8	bometest_innovative	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Federica	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Mariouns	0	0	0	0	0	0	0	0	0	0	0	0	0

First prototype

- **Open source**
- Works but
 - Ugly code
 - Lots of possible improvements
- User test
 - Like oral dimension
 - Improve rules explanation (Gaming Equipment)
 - Improve card handling (e.g. for a task in which students create cards)
- Perspectives
 - Corpus to check the use of strategic competences
 - Better scoring (less hard on the oracle?)
 - Other transmission modalities (2 words, video?)
 - Better *feedback* (Playing context)
 - Question decisions
 - GWAP

Case study #2

Tomorrow 3:45pm



Magic Word

Letter game

http://wiki.lezinter.net/index.php/Projets:Magic_Word

<http://magicword.lezinter.net/>

As a conclusion

- To limit « chocolate coated broccolis » we
 - Start from a successful game
 - “Ludicize” by adding learning element at various rule levels
- Perspectives
 - Improve games
 - Gaming equipment (tutorials, interfaces, metaphors, etc.)
 - Game structures (other modes, scoring, etc.)
 - Integration (Playing context)
 - Importance experimentally showed
 - Test games
 - Game
 - Learning
 - Interrelations

As a conclusion

- Can we provoke a playful attitude?
 - « Bouleversant, comme disent les critiques ciné. » 10/10
<http://www.gameblog.fr/tests/1642-papers-please-pc-mac>
 - « Bien loin d'une scène indé arty souvent encline à raconter l'introspection post-ado, le titre de Lucas Pope est de ces petits jeux qui ont un sacré coffre et qui donnent des envies de lecture. » 8/10
<http://www.gamekult.com/jeux/test-papers-please-SU3050170257t.html>
 - The New Yorker → Best game 2013
 - Wired Magazine → Best game 2013
 - Forbes → Best independent game 2013
 - Ars Technica → Best game 2013
 - PC World → Best game 2013
 - Destructoid → Best game 2013

As a conclusion



- Can we provoke a playful attitude?
 - « Bouleversant, comme disent les critiques ciné. » 10/10
<http://www.gameblog.fr/tests/1642-papers-please-pc-mac>
 - « Bien loin d'une scène indé arty souvent encline à raconter l'introspection post-ado, le titre de Lucas Pope est de ces petits jeux qui ont un sacré coffre et qui donnent des envies de lecture. » 8/10
<http://www.gamekult.com/jeux/test-papers-please-SU3050170257t.html>
 - The New Yorker → Best game 2013
 - Wired Magazine → Best game 2013
 - Forbes → Best independent game 2013
 - Ars Technica → Best game 2013
 - PC World → Best game 2013
 - Destructoid → Best game 2013



Questions, observations, comments, etc.

mathieu.loiseau@univ-grenoble-alpes.fr

<http://lezinter.net/~lzbk>

Bibliography

- Becker, Katrin. 2007. "Digital Game-Based Learning Once Removed: Teaching Teachers." *British Journal of Educational Technology* 38 (3): 478–488. <https://doi.org/10.1111/j.1467-8535.2007.00711.x>.
- Bétrancourt, Mireille. 2011. "Réflexion Sur Les Technologies Dans l'éducation et La Formation : Quelles Pistes Pour La Recherche ?" Rapport de Prospective pour la Recherche : éducation et Apprentissage à l'horizon 2030 (PREA 2K30). Agence Nationale de la Recherche. <http://tecfa.unige.ch/perso/mireille/papers/Techno-Conditions.pdf>.
- Bogost, Ian. 2014. "Why gamification is bullshit." In *The gameful world: approaches, issues, applications*, edited by Steffen P. Walz and Sebastian Deterding, 65–79. Cambridge: MIT press.
- Brougère, Gilles. 2012. "Le Jeu Peut-Il Être Sérieux? Revisiter Jouer/Apprendre En Temps de Serious Game." *Australian Journal of French Studies* 49 (2): 117–29. <https://doi.org/10.3828/AJFS.2012.10>.
- Bruckman, Amy. 1999. "Can Educational Be Fun?" In *Game Developers Conference Proceedings*, 99:75–79. <http://www.cc.gatech.edu/~asb/papers/conference/bruckman-gdc99.pdf>.
- Caillois, Roger. 1958. *Les jeux et les hommes*. Gallimard. Paris.
- Canale, Michael, and Merrill Swain. 1980. "Communicative Approaches to Second Language Teaching and Testing." *Applied Linguistics* 1 (1): 1–47.
- CECRL. 2000. *Cadre Européen Commun de Référence Pour Les Langues: Apprendre, Enseigner, Évaluer*. Edited by Conseil de la coopération culturelle — Comité de l'éducation — Division des langues vivantes. Édition française. Strasbourg ; Paris: Conseil de l'Europe. <http://medias.didierfle.com/media/contenuNumerique/007/4140016745.pdf>
- Chandelier, Dorian. 2014. *Le Game Design*. Merci Dorian ! <http://www.nesblog.com/dodo-moto/>.
- Cornillie, Frederik, Steven L. Thorne, and Piet Desmet. 2012. "Digital Games for Language Learning: From Hype to Insight?" *ReCALL* 24 (3): 243–256. <https://doi.org/10.1017/S0958344012000134>.
- Dörnyei, Zoltán, and Sarah Thurrell. 1991. "Strategic Competence and How to Teach It." *ELTJ* 45 (1): 16–23.
- Gee, James Paul. 2003. "What Video Games Have to Teach Us about Learning and Literacy." *Computers in Entertainment* 1 (1): 20–20. <https://doi.org/10.1145/950566.950595>.
- Genvo, Sébastien. 2013. "Penser la formation et les évolutions du jeu sur support numérique." Habilitation à Diriger des Recherches, Paris 13. <http://www.ludologique.com/wordpress/?p=445>.
- Girard, Coralie, Jean Ecalte, and Annie Magnan. 2013. "Serious Games as New Educational Tools: How Effective Are They? A Meta-Analysis of Recent Studies." *Journal of Computer Assisted Learning* 29 (3): 207–219. <https://doi.org/10.1111/j.1365-2729.2012.00489.x>.
- Henriot, Jacques. 1989. *Sous couleur de jouer : La métaphore ludique*. Paris: José Corti Editions.

- Hubbard, Philip. 1991. "Evaluating Computer Games for Language Learning." *Simulation & Gaming* 22 (2): 220–223.
<https://doi.org/10.1177/1046878191222006>.
- Jong, Morris, Jimmy Lee, and Junjie Shang. 2013. "Educational Use of Computer Games: Where We Are, and What's Next." In *Reshaping Learning*, edited by Ronghuai Huang and J. Michael Spector, 299–320. New Frontiers of Educational Research. Springer Berlin Heidelberg.
http://dx.doi.org/10.1007/978-3-642-32301-0_13.
- Kiili, Kristian. 2005. "Digital Game-Based Learning: Towards an Experiential Gaming Model." *The Internet and Higher Education* 8 (1): 13–24.
<http://dx.doi.org/10.1016/j.iheduc.2004.12.001>.
- Lavigne, Michel. 2013. "Pertinence et Efficacité Des Serious Games — Enquête de Réception Sur Neuf Serious Games." Edited by Sylvie Leleu-Merviel and Khaldoun Zreik. *Revue Des Interactions Humaines Médiatisées* 14 (1): 99–123.
- Loiseau, Mathieu, Cristiana Cervini, Andrea Ceccherelli, Monica Masperi, Paola Salomoni, Marco Roccetti, Antonella Valva, and Francesca Bianco. 2016. "Exploring learners' perceptions of the use of digital letter games for language learning: the case of Magic Word." In *CALL communities and culture — Short papers from EUROCALL 2016*, edited by Salomi Papadima-Sophocleous, Linda Bradley, and Sylvie Thouësny, 277–283. Limassol (Chypre): Research-publishing.net.
<https://doi.org/10.14705/rpnet.2016.eurocall2016.575>.
- Loiseau, Mathieu, Racha Hallal, Pauline Ballot, and Ada Gazidedja. 2016. "Game of Words: prototype of digital game focusing on oral production (and comprehension) through asynchronous interaction." In *CALL communities and culture — Short papers from EUROCALL 2016*, edited by Salomi Papadima-Sophocleous, Linda Bradley, and Sylvie Thouësny, 284–289. Limassol (Chypre): Research-publishing.net.
<https://doi.org/10.14705/rpnet.2016.eurocall2016.576>.
- Loiseau, Mathieu, Virginie Zampa, and Pauline Rebourgeon. 2015. "Magic Word : Premier Jeu Développé Dans Le Cadre Du Projet Innovalangues." *ALSIC* 18 (2). <https://doi.org/10.4000/alsic.2828>.
- Mariais, Christelle. 2012. "Modèles pour la conception de Learning Role-Playing Games en formation professionnelle." Thèse, Université de Grenoble.
<http://tel.archives-ouvertes.fr/tel-00702237>.
- Mariani, Luciano. 1994. "Competenza strategica e interazione orale." In *La voglia di insegnare*, edited by D. Corno and M.G. Dandini, 145–152. Turin: Regione Piemonte Assessorato Istruzione.
<http://www.learningpaths.org/Articoli/competenzastrategica.pdf>.
- Moattarian, Aasa, and Mohammad Hassan Tahririan. 2013. "Communication Strategies Used in Oral and Written Performances of EFL Learners from Different Proficiency Levels: The Case of Iranian EFL University Students." *Journal of Foreign Language Teaching and Translation Studies* 2 (1): 21–37.
- Nakamura, Jeanne, and Mihaly Csikszentmihalyi. 2002. "The Concept of Flow." In *Handbook of Positive Psychology*, edited by C. R. Snyder and Shane J. Lopez, 89–105. Oxford: Oxford University Press.
<http://myweb.stedwards.edu/michaelo/2349/paper1/ConceptOfFlow.pdf>.

- Oblinger, Diana G. 2004. "The Next Generation of Educational Engagement." *Journal of Interactive Media in Education* 2004 (1): 1-16.
<https://doi.org/10.5334/2004-8-oblinger>.
- Papastergiou, Marina. 2009. "Digital Game-Based Learning in High School Computer Science Education: Impact on Educational Effectiveness and Student Motivation." *Computers and Education* 52 (1): 1-12.
<https://doi.org/10.1016/j.compedu.2008.06.004>.
- Pichon, Emmanuelle Le, Henriette De Swart, Jacob A. S. Vorstman, and Huub Van Den Bergh. 2013. "Emergence of Patterns of Strategic Competence in Young Plurilingual Children Involved in French International Schools." *International Journal of Bilingual Education and Bilingualism* 16 (1): 42-63. <https://doi.org/10.1080/13670050.2012.679251>.
- Pope, Lucas. 2013. *Papers, Please*. 3909 LLC. <http://www.papersplea.se/>.
- Rocchetti, Marco, Paola Salomoni, Mathieu Loiseau, Monica Masperi, Virginie Zampa, Andrea Ceccherelli, Cristiana Cervini, and Antonella Valva. 2016. "On the Design of a Word Game to Enhance Italian Language Learning." In *2016 International Conference on Computing, Networking and Communications (ICNC)*. Kauai: IEEE Communications Society.
<https://doi.org/10.1109/ICCNC.2016.7440546>.
- Salen, Katie, and Eric Zimmerman. 2004. *Rules of Play: Game Design Fundamentals*. Cambridge: MIT Press.
<http://mitpress.mit.edu/books/rules-play>.
- Schmidt, Richard. 2012. "Attention, Awareness, and Individual Differences in Language Learning." In *Perspectives on Individual Characteristics and Foreign Language Education*, edited by Izumi Walker Wai Meng Chan Kwee Nyet Chin, Sunil Bhatt, 6:27-50. Studies in Second and Foreign Language Education. Singapur: Mouton de Gruyter.
<http://nflrc.hawaii.edu/PDFs/SCHMIDT%20Attention,%20awareness,%20and%20individual%20differences.pdf>.
- Silva, Haydée. 1999. "Poétiques Du Jeu. La Métaphore Ludique Dans La Théorie et La Critique Littéraires Françaises Au XXe Siècle." Thèse, Paris: Université Paris 3 — Sorbonne Nouvelle.
<http://lewebpedagogique.com/jeulangue/files/2011/01/PoetiquesLud.pdf>.
- . 2008. *Le Jeu En Classe de Langue*. Techniques et Pratiques de Classe. Paris: CLE International.
- Söbke, Heinrich, Thomas Bröker, and Oliver Kornadt. 2013. "Using the Master Copy — Adding Educational Content to Commercial Video Games." In *The Proceedings of The 7th European Conference on Games Based Learning*, edited by Paula Escudeiro and Carlos Vaz de Carvalho, 2:521-530. Reading: Academic Conferences and Publishing International Limited.
http://issuu.com/acpil/docs/ecgbl2013-issuu_vol_2.
- Villez, Barbara. 2006. "Objectifs Spécifiques d'apprentissage En Langues Étrangères à l'Université." Edited by Yvana Ayme. *Cahiers Pédagogiques*, no. 448 (December): 51-53.