



## COOKING TO LEARN: a digital educational resource for the promotion of curricular integration in primary school

**Adriana Cardoso<sup>1</sup>, Ricardo Pereira Rodrigues<sup>2</sup>, Joana Souza<sup>2</sup>, Nuno Palma<sup>2</sup>**  
EDULEARN20

12th annual International Conference on Education and New Learning Technologies  
6th and 7th of July 2020, Virtual Conference

Funding: Instituto Politécnico de Lisboa (IPL/2019/COZI\_AP\_ESELx)

<sup>1</sup> Instituto Politécnico de Lisboa, Escola Superior de Educação; Universidade de Lisboa, Centro de Linguística (Portugal)

<sup>2</sup> Instituto Politécnico de Lisboa, Escola Superior de Comunicação Social (Portugal)

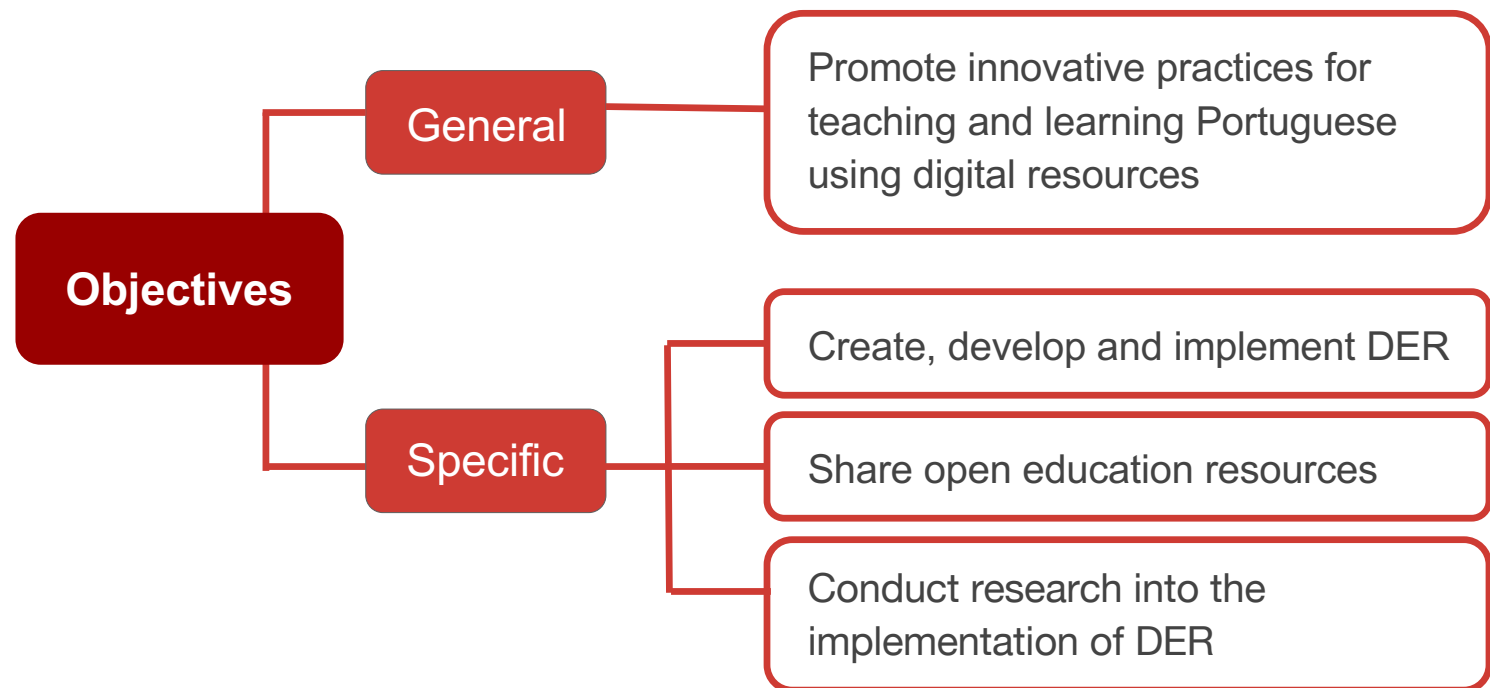
## GOAL

Present results of *Cooking to Learn*, a digital educational resource which aims at promoting an integrated development of skills of students attending the 3<sup>rd</sup> grade of Primary School (age 8/9).





## Digital Educational Resources for Teaching and Learning Portuguese at Primary School (6-10 years)



## SUMMARY

1. Instructional design
2. Multimedia design
3. Interactivity





ADDIE (Branch, 2009).

Constructive approach to learning.

Integrated development of skills (Portuguese Language, Mathematics and Natural Sciences).

A genre-centred approach to language instruction, drawing upon the notion of text genre (Marcuschi, 2008, a.o.) and the model of didactic sequence (Shneuwly & Dolz, 2004).

# INSTRUCTIONAL DESIGN

## RECIPE: DIDACTIC PATH OF THE DER

### BACKGROUND

Introducing the  
restaurant and the chef



Task 1

Task 2



### EXPLORING RECIPES

#### ACTIVITY 1: MULTIVITAMIN JUICE

- P** • Task 1. Obligatory components of a recipe
- NS** • Task 2. Season fruits
- M** • Task 3. Pictograms

#### ACTIVITY 2: THREE DELICIOUS RECIPES

- P** • Task 1. Optional components of a recipe
- M** • Task 2. Combinatorial problem

#### ACTIVITY 3: HEALTHY CHICKEN BURGER

- P** • Task 1. Quantifier
- M** • Task 2. Multiplication

#### ACTIVITY 4: ORGANIZING THE WORK SPACE

- P** • Task 1. Hierarchical relations between words
- NS** • Task 2. Parts of a plant
- P** • Task 3. Lexical fields

#### ACTIVITY 5: STEP BY STEP

- P** • Task 1. Ordering actions in a recipe



### WRITING

Production of a written  
recipe after watching a  
cooking video

# INSTRUCTIONAL DESIGN

## RECIPE: DIDACTIC PATH OF THE DER

### BACKGROUND

Introducing the  
restaurant and the chef



Task 1

Task 2

CHEF  
UNIFORM

CHEF  
RESPONSIBILITIES



### EXPLORING RECIPES

#### ACTIVITY 1: MULTIVITAMIN JUICE

P

- Task 1. Obligatory components of a recipe

NS

- Task 2. Season fruits

M

- Task 3. Pictograms

#### ACTIVITY 2: THREE DELICIOUS RECIPES

P

- Task 1. Optional components of a recipe

M

- Task 2. Combinatorial problem

#### ACTIVITY 3: HEALTHY CHICKEN BURGER

P

- Task 1. Quantifier

M

- Task 2. Multiplication

#### ACTIVITY 4: ORGANIZING THE WORK SPACE

P

- Task 1. Hierarchical relations between words

NS

- Task 2. Parts of a plant

P

- Task 3. Lexical fields

#### ACTIVITY 5: STEP BY STEP

P

- Task 1. Ordering actions in a recipe



### WRITING

Production of a written  
recipe after watching a  
cooking video

P

PORTUGUESE LANGUAGE

NS

NATURAL SCIENCES

M

MATHEMATICS

# INSTRUCTIONAL DESIGN

## RECIPE: DIDACTIC PATH OF THE DER

### BACKGROUND

Introducing the  
restaurant and the chef



Task 1

Task 2

CHEF  
UNIFORM

CHEF  
RESPONSIBILITIES



### EXPLORING RECIPES

#### ACTIVITY 1: MULTIVITAMIN JUICE

- P** • Task 1. Obligatory components of a recipe
- NS** • Task 2. Season fruits
- M** • Task 3. Pictograms

#### ACTIVITY 2: THREE DELICIOUS RECIPES

- P** • Task 1. Optional components of a recipe
- M** • Task 2. Combinatorial problem

#### ACTIVITY 3: HEALTHY CHICKEN BURGER

- P** • Task 1. Quantifier
- M** • Task 2. Multiplication

#### ACTIVITY 4: ORGANIZING THE WORK SPACE

- P** • Task 1. Hierarchical relations between words
- NS** • Task 2. Parts of a plant
- P** • Task 3. Lexical fields

#### ACTIVITY 5: STEP BY STEP

- P** • Task 1. Ordering actions in a recipe



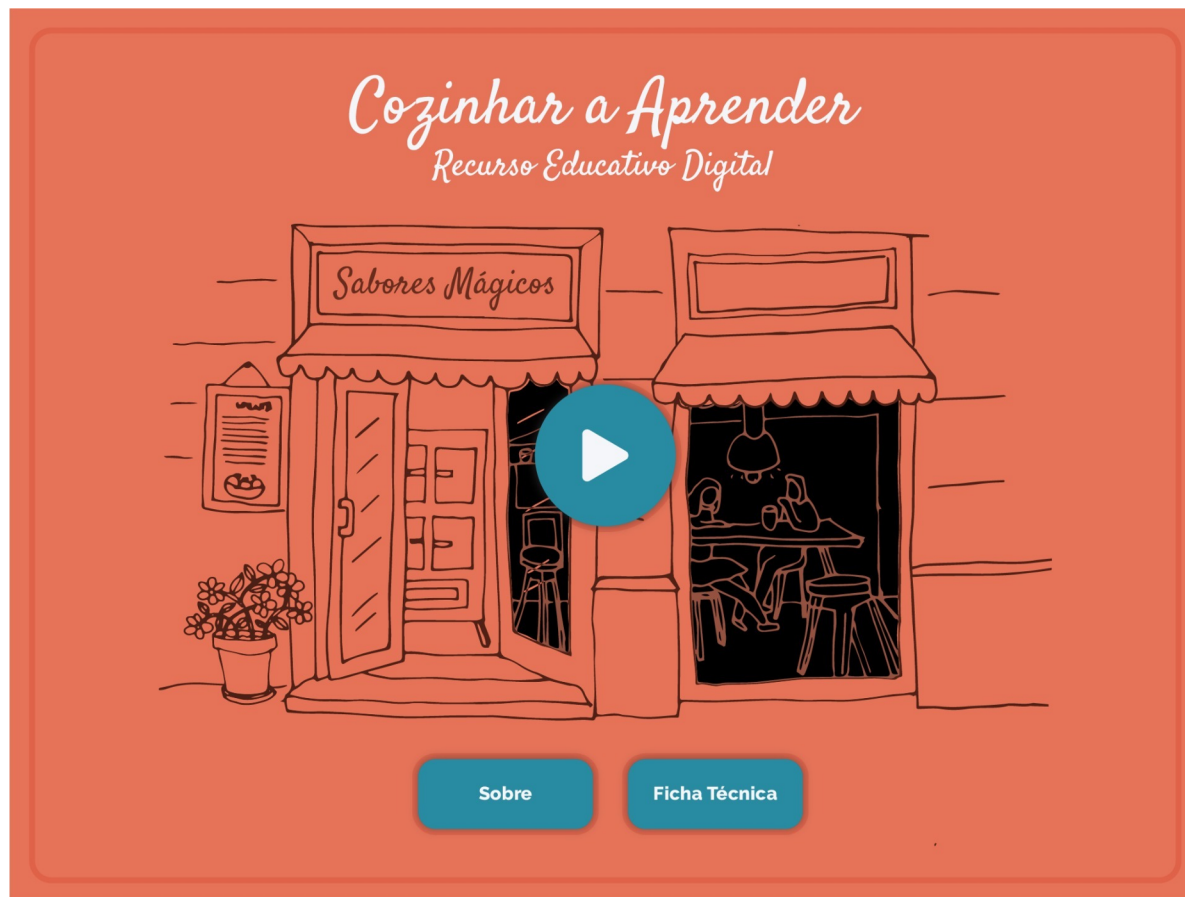
### WRITING

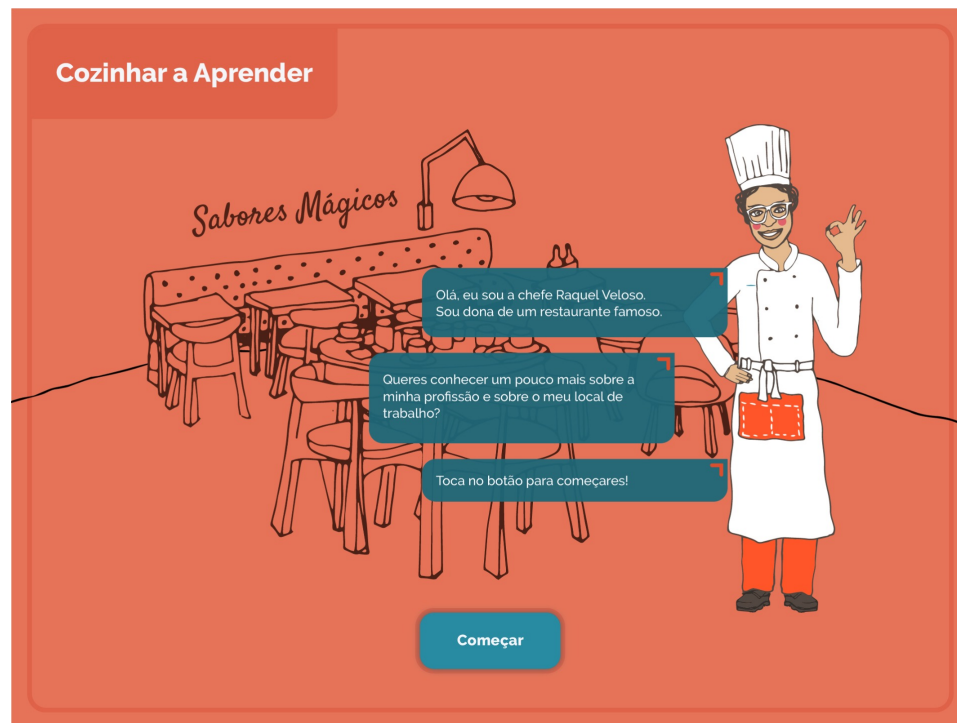
Production of a written  
recipe after watching a  
cooking video

## *Cooking to Learn*

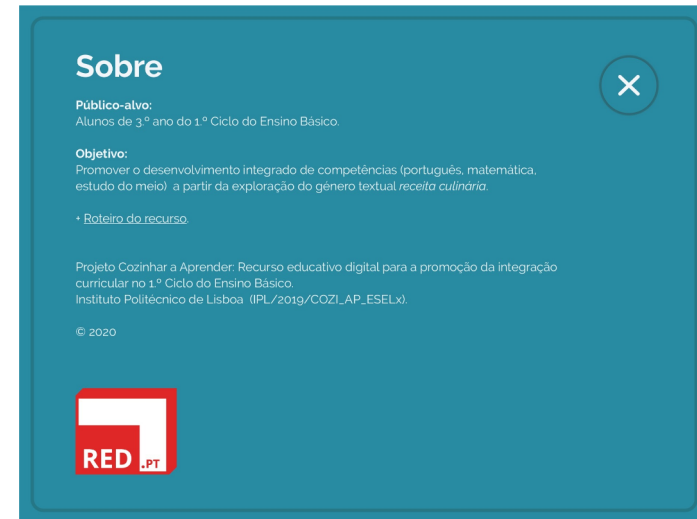
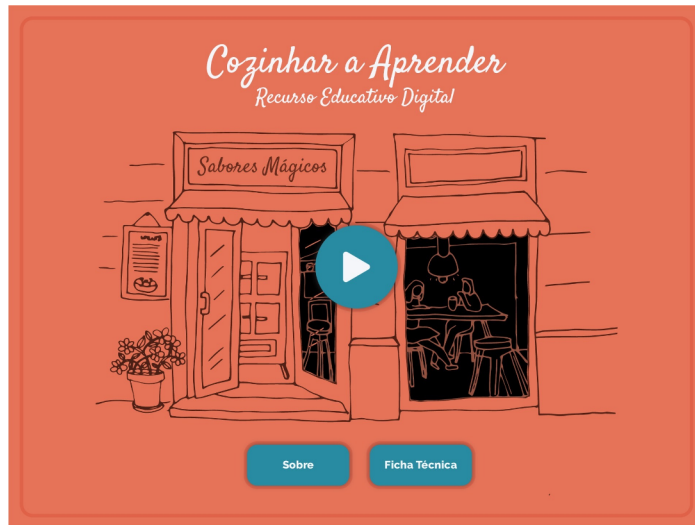
Design principles for multimedia interfaces (Costello, 2012)

Principles of multimedia learning (Mayer, 2009)





## MULTIMEDIA DESIGN



Warm colors to background areas.

Cold colors to accommodate instructional and content information.

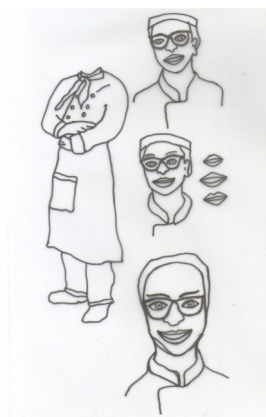
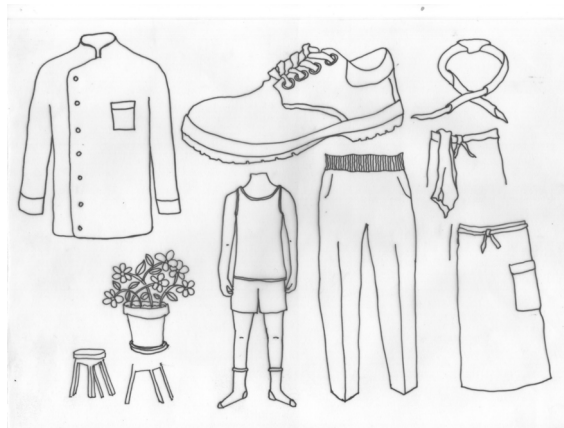
Color composition logic serves pre-training principle (Mayer, 2009).



COOKING TO LEARN: a digital educational resource for the promotion of curricular integration in primary school



## MULTIMEDIA DESIGN



(Peters, 2014)



### Strategies

graphics that support learning

line drawing illustrations

no extraneous graphics

minimal or absent backgrounds

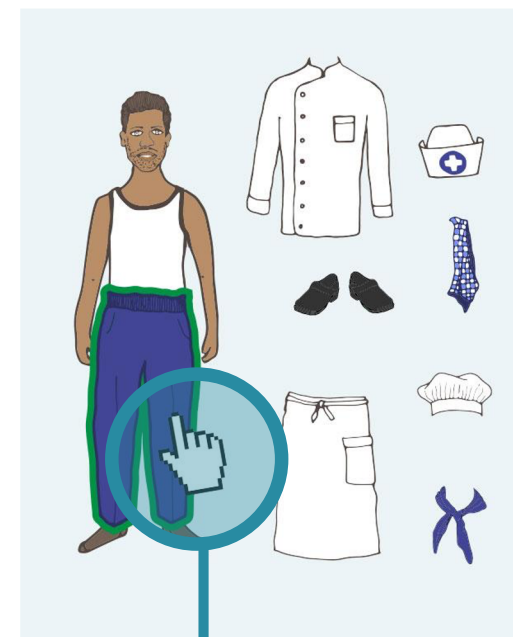
## INTERACTIVITY



### Design and interactive patterns

textual elements  
voice narration  
sound effects  
music  
hot spots  
navigational elements  
rewards for progress  
gestures  
zoom

## INTERACTIVITY



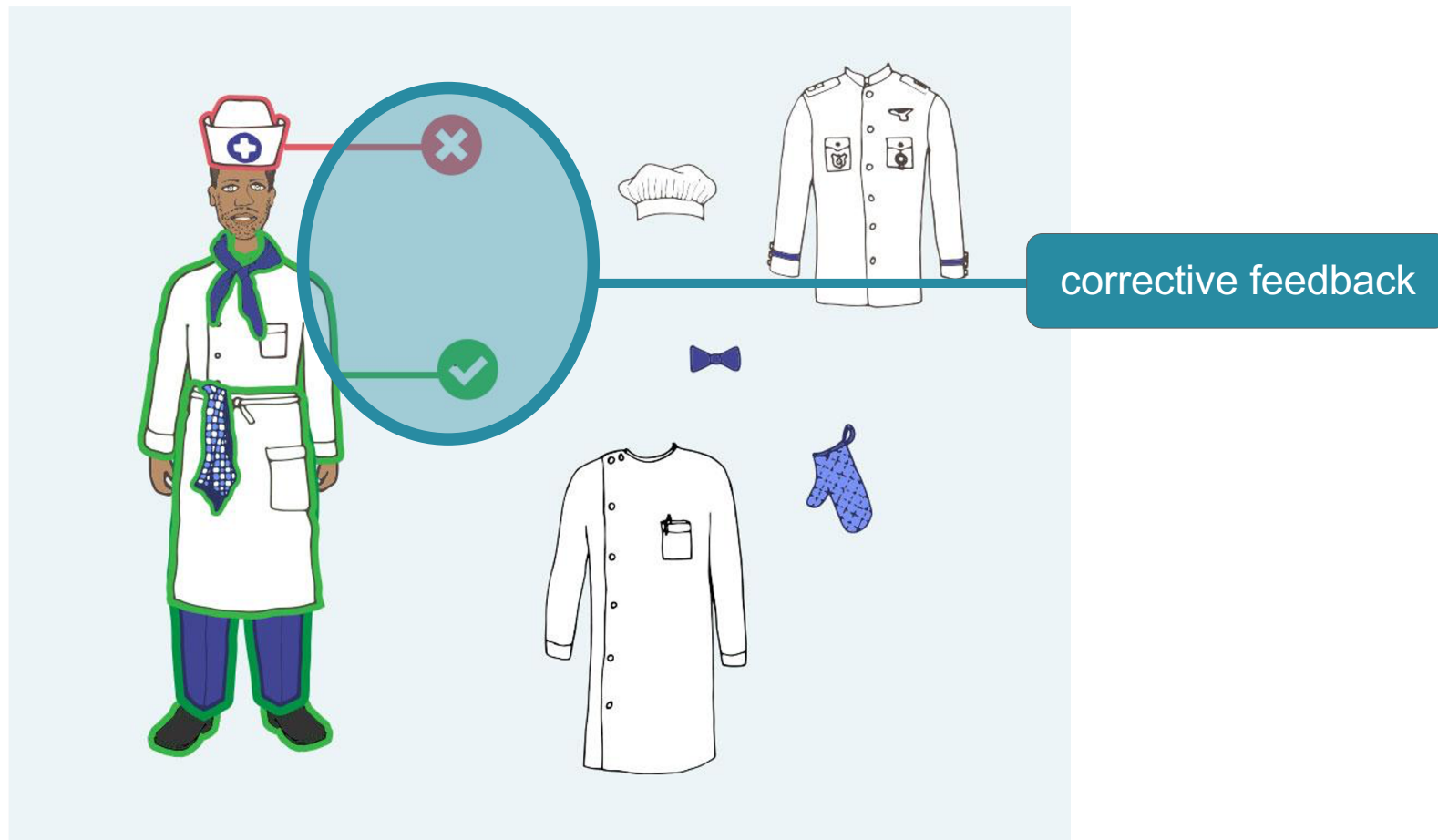
drag & drop

OnClick/OnTouch



COOKING TO LEARN: a digital educational resource for the promotion of curricular integration in primary school

## INTERACTIVITY



### *Cooking to Learn*

Guidelines for the future development of DER.

An opportunity to evaluate if the methodology adopted is worth pursuing for a sustainable development of DER.

## FINAL REMARKS



Thank you!







## References

- R. M. Branch. *Instructional Design: The ADDIE Approach*. Georgia: Springer, 2009.
- V. Costello, *Multimedia Foundations: core concepts for digital design*. London: Focal Press, 2012.
- L. A. Marcuschi, *Produção textual, análise de géneros e compreensão*. São Paulo: Parábola Editora, 2008.
- R. E. Mayer. *Multimedia Learning*, Second Edition. Cambridge University Press, 2009.
- B. Schneuwly and J. Dolz, *Géneros orais e escritos na escola*. Campinas: Mercado de Letras, 2004.
- D. Peters, *Interface Design for Learning: Design Strategies for Learning Experiences*. New Riders, 2014.