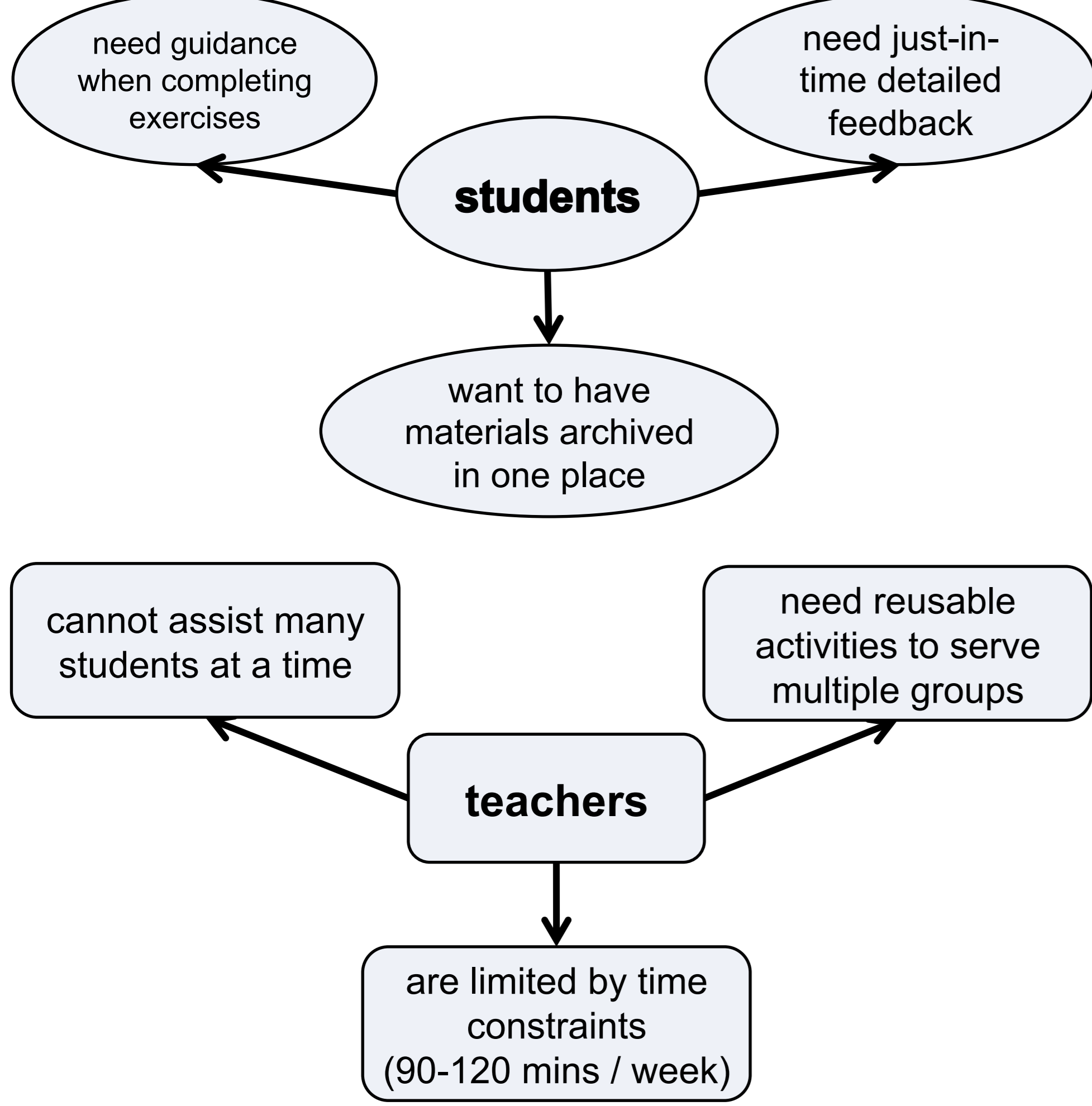


1. Motivation

Previous attempts at introducing Moodle to pronunciation and phonetics courses have confirmed its reliability and usefulness [1], [4]. However, many issues remain unaddressed:



3. Displaying phonetic/IPA symbols

	Image	PDF	Flash	Unicode
no need for external plug-ins	✓	✓	✓	✓
platform-agnostic	✓	✓	✓	✓
easily embeddable in HTML	✓	✓	✓	✓
lossless scaling	✓	✓	✓	✓
questions and feedback in quizzes	✓	✓	✓	✓
answers in quizzes	✓	✓	✓	✓

4. Styling Unicode for transcription

Moodle offers a limited number of default fonts for use within the platform. Unfortunately, none of them fully supports IPA symbols, which means that they may differ from the symbols depicted in textbooks on phonetic transcription. To remedy this situation, external web fonts can be used. This can be achieved through simple HTML markup:

```
<span style="font-family: Charis SIL, Doulos SIL, DejaVu Sans">phonetic transcription goes here</span>
```

Notes on the markup:

- `...` separates the part of the text to be styled
- `style="..."` contains styling information
- `font-family` declares which font to use:
 - Charis SIL** is the most comprehensive font covering all IPA symbols including boldface and italics
 - Doulos SIL** is similar to the above but offers symbols only in Roman typeface
 - DejaVu Sans** is a sans-serif font supporting all IPA symbols

The on-screen phonetic keyboard plugin for Moodle was written in PHP and JavaScript on the basis of existing Moodle functionalities. The module is compatible with Moodle 2.0 onwards and requires only a simple installation. A ready-to-use version of the module is available free of charge here: <http://goo.gl/5UyFU>. Simply ask your Moodle admin to add it in the `/question/type/` directory. You will then be able to select the *IPA transcription* question type in your quiz question bank.

2. Our approach

Educational features of Moodle quizzes

- Feedback for wrong answers**
- pre-programmed
 - specific for each wrong answer
 - hints at the solution without giving away the answer
 - just-in-time

- Feedback for correct answers**
- generic
 - provides additional info to instruct and entertain
 - together with wrong answer feedback creates a personalised *effective learning environment* [2], [3]

- Monitoring and control**
- diagnostic tab for data-driven decisions:
 - error report per item helps adjust quiz difficulty level
 - errors and time spent on task help find struggling students
 - quizzes may open, close and grade students' work automatically
 - reusable between groups

Multiple Choice

The correct pronunciation of the word **Porsche** is...

Choose one answer.

Some people write the brand's name as /pɔ:ʃeɪ/. Porsche. Why?

/pɔ:ʃeɪ/

/pɔ:ʃe/

/pɔ:ʃ/

Choose one answer.

/pɔ:ʃeɪ/

/pɔ:ʃe/

/pɔ:ʃ/

Even though /pɔ:ʃ/ is the most common variant, one may also encounter the two-syllable /pɔ:ʃeɪ/. The latter version is actually closer to the original German pronunciation!

Phonetic Keyboard

Transcribe the word 'bat' indicating all relevant allophonic processes. Remember to put the transcription in square brackets [].

Answer:

[bæt]

You've missed two processes. Think of what happens when:

- a vowel is followed by a fortis plosive within the same syllable;
- a fortis plosive or affricate is at the end of a word, preceded by a sonorant.

Answer:

[bæʔt]

Well done! You've indicated all three processes correctly.

Question text	Answer's text	partial credit	R. Counts	R.%	Correct Facility	SD
The correct pronunciation of the word Porsche is...	/pɔ:ʃeɪ/	(0.00)	1/25	(4%)	70%	0.409
	/pɔ:ʃe/	(0.00)	0/25	(0%)		
	/pɔ:ʃ/	(1.00)	19/25	(76%)		

Detailed responses

First name	Surname	#1	#2	#3	#4	#5	#6	#7
Student 1								
Student 2		[bæʔt]	[ɛmvi]	[hɛlθ]	[mɪd]	[njɜ:	[smɑ:	
Student 3		[bæʔt]	[ɛnvi]					
Student 4		[bæʔt]	[ɛmvi]	[hɛlθ]	[mɪd]	[njɜ:	[smɑ:	[sɑ:

5. Preparation of quiz questions

Manual (within Moodle interface)

Moodle offers a rich built-in question editor. Unfortunately, while functional, the interface of the default editor is cumbersome.

Semi-automated (external editing + import)

Large question sets can be prepared externally, and parts of the process can be automated. This can be done by using a standard word processor, e.g. MS Word, without any programming skills. Example workflow below.

Resources needed:

- a wordlist
- an automated transcriber
- an MS Word answer template
- an MS Word template for Moodle XML

Step 1

Feed the wordlist into the transcriber.

Spelling	Score1	Trans1	Score2	Trans2
care	100	keə	0	*
avoid	100	ə'vɔɪd	0	*
imagine	100	ɪ'mædʒɪn	100	ɪ'mædʒən
tonight	100	tə'naɪt	0	*
huge	100	hju:dʒ	0	*
ball	100	bɔ:l	0	*
talk	100	tɔ:k	0	*
theory	100	'θɔ:ri	0	*
impact	100	ɪm'pækt	0	*
respond	100	rɪ'spɒnd	0	*

Step 2

Paste the words and their transcriptions into the answer template. Edit as needed.

Step 3

Compile questions for import. Use MS Word's *Mailing feature* on the XML template and the saved answer sheet. Save as Unicode text.

```
<quiz>
  <question type="ipatranscription">
    <name><text>care</text></name>
    <questiontext format="html">
      <text>
        Provide a broad transcription of this word:</p>
        <p style="font-size: 1.5em; font-weight: bold">care</p>
      </text>
    
```

Step 4

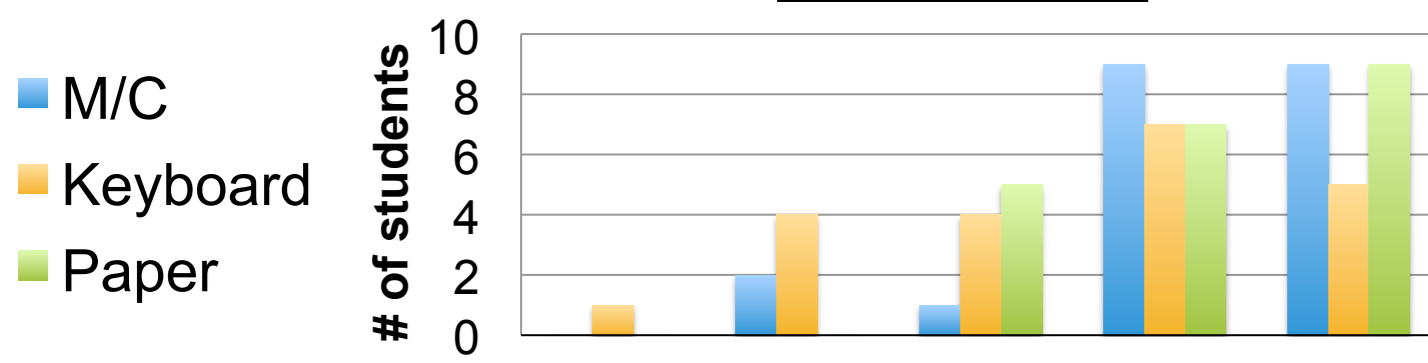
Import questions using the Moodle quiz editor.



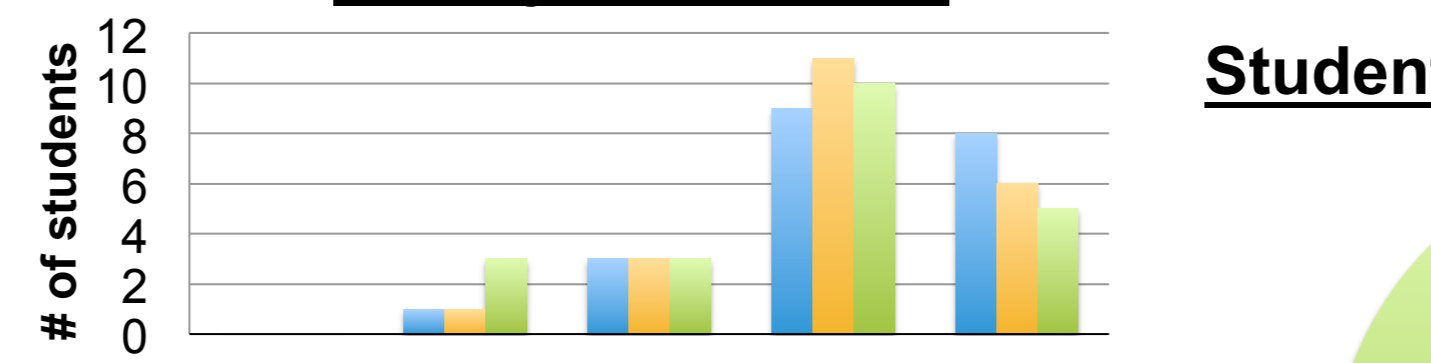
Templates, sample files and tutorials available here: <http://goo.gl/Ht0OE>. Feel free to contact us if you have questions.

Students' preferences	Moodle Multiple Choice	Moodle Phonetic Keyboard	Paper Exercises
Likes	<ul style="list-style-type: none"> fast and easy to use helps to develop critical thinking... ...and doesn't require much effort 	<ul style="list-style-type: none"> instant, accurate and clear feedback helps to memorise the correct form easy to correct errors (no rewrite needed) 	<ul style="list-style-type: none"> quicker and more effective learning more comfortable and natural writing no need to carry a laptop no Facebook or YouTube to distract
Dislikes	<ul style="list-style-type: none"> overall, difficulty level too low because... ...doesn't require much effort proper transcription form quickly forgotten 	<ul style="list-style-type: none"> takes too much time to complete irritating keyboard layout (cannot find the right symbols) 	<ul style="list-style-type: none"> no (instant) feedback difficult to correct errors (rewrite needed) sheets often get mislaid

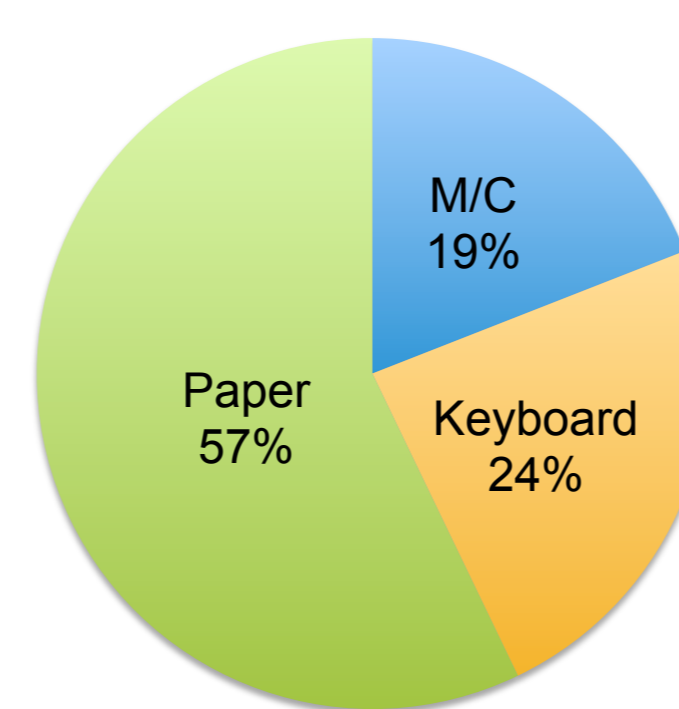
Ease of use



Quality of feedback



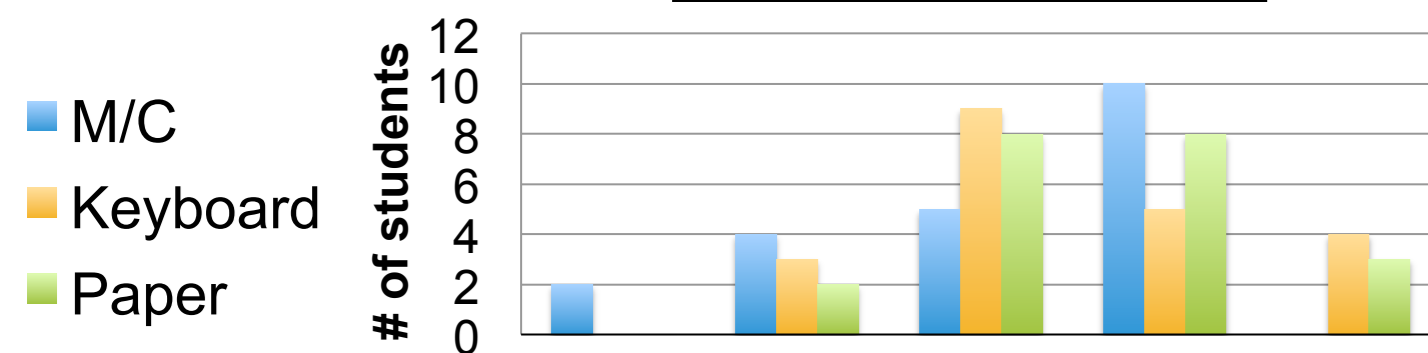
Students' preferences overall



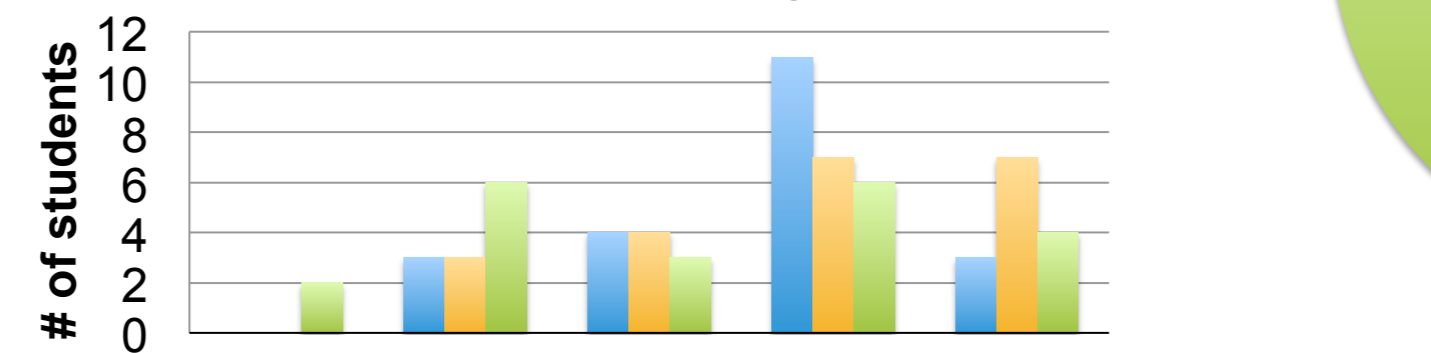
Next steps

- colour-coded keyboard
- phonetic keyboard for mobile devices
- screencasts for on-boarding users
- dissemination among teachers

Motivational factor



Reusability



6. References

[1] Ashby, M., K. Yanagisawa, Y. S. Kim, J. Maidment and J. Przedlacka. 2009. "Achieving interactivity in online learning of phonetic skills". *Proceedings of Phonetics Teaching and Learning Conference 2009*.

[2] Carmean, Colleen and Jeremy Haefner. "Mind over matter: Transforming course management systems into effective learning environments", *Educause Review* 37, 6: 26-34.

[3] Nicholls, Gill. 2002. *Developing teaching and learning in higher education*. London: Routledge Falmer.

[4] Wilson, Ian. 2008. "Using Praat and Moodle for teaching segmental and suprasegmental pronunciation". *Proceedings of the 3rd International WorldCALL Conference: Using Technologies for Language Learning (WorldCALL 2008)*.