

Designing auto-scored speaking tasks in Moodle



JALTCALL 2021
Fri, Jun 4, 18:00-19:15

Paul Daniels, Kochi University of Technology

Speech Assessment



Question-type in Moodle

Started on Monday, 25 February 2019, 4:38 PM
State Finished
Completed on Tuesday, 26 February 2019, 12:5 PM
Time taken 20 hours 46 mins
Marks 1.97/2.00
Grade 9.85 out of 10.00 (99%)

Question 1
Partially correct
Mark 0.97 out of 1.00

Quiz navigation
1 2
Show one page at a time
Finish review
Start a new preview

I have a dream...

[0.34] I have a dream
[1.22] that my four little children
[5.36] will one day live in a nation
[6.64] where they will not be judged by the colour of their skin
[9.92] but by the content of their character.
[11.92] I have a dream today!
[15.26] I have a dream
[17.26] that one day, one day right down in Alabama
[20.5] little black boys and black girls will be able to join hands with little white boys and white girls
[25.94] as sisters and brothers.
[27.62] I have a dream today!

Target response: I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character.
Your response: I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their shirt
Score: 97

Analysis	Result
Total word count	35
Total unique words	29
Number of sentences	1

speech assessment question type: x +
https://fltrc.biz/moodle/mod/quiz/attempt.php?attempt=34&cmid=6&page=1

Moodle Test Server 361 English (en) Paul Daniels

2018 Moodle 361 Test Course
Dashboard / My courses / 18 M361 / Topic 5 / speech assessment question type / Preview

Question 2
Not yet answered
Marked out of 1.00

Quiz navigation
1 2
Finish attempt ...
Start a new preview

Listen and repeat.

Target response:
• how often do you eat at fastfood restaurants
how often do you eat at fast-food restaurants

Score: 100

Previous page

Speech Assessment 2 Speech Assessment 3 (with response)

Moodle Docs for this page
You are logged in as Paul Daniels (Log out)
18 M361
Data retention summary
Get the mobile app

Computerized scoring of speech







Speaking Score

Analysis of Speech

Speaking Assessment Demo

Speech assess

Sample

Student	Student answer	Text analysis												
 Paul Daniels February 22, 2016 @ 06:37 [edit] [delete]	<ol style="list-style-type: none"> 100% Answer: you're right if I get some soft drinks can you get some snacks Target answer: You're right. If I get some soft drinks can you pick up some snacks. 100% Answer: I think 5 bags of chips should be enough Target answer: I think 5 bags of chips should be enough. 100% Answer: yes could you get some please Target answer: Yes. Could you get some please.	<p>Total: 100%</p> <table border="1"><tr><td>Total Word Count:</td><td>27</td></tr><tr><td>Total Unique Words:</td><td>22</td></tr><tr><td>Number of Sentences:</td><td>3</td></tr><tr><td>Average Words per Sentence:</td><td>9</td></tr><tr><td>Hard Words:</td><td>0 (0%)</td></tr><tr><td>Lexical Density:</td><td>81.48%</td></tr></table>	Total Word Count:	27	Total Unique Words:	22	Number of Sentences:	3	Average Words per Sentence:	9	Hard Words:	0 (0%)	Lexical Density:	81.48%
Total Word Count:	27													
Total Unique Words:	22													
Number of Sentences:	3													
Average Words per Sentence:	9													
Hard Words:	0 (0%)													
Lexical Density:	81.48%													

Textbook tasks



Speaking tasks



- Dialogues
- Q & A
- Reading comprehension
- Grammar activities



Dialogue practice















Speaking Assessment Demo

[Home](#) ▶ [My courses](#) ▶ [Miscellaneous](#) ▶ [Speech](#) ▶ [Speech assessment](#) ▶ [Sample conversation](#)

[Submissions](#) [Record answers](#)

Listen to the conversation & repeat.

	We need to get ready for the party tonight. ▶	
	You're right. If I get some soft drinks can you pick up some snacks. ▶	
	Sure, how many do we need? ▶	
	I think 5 bags of chips should be enough. ▶	
	Do we need any paper plates? ▶	
	Yes. Could you get some please. ▶	
	OK. By the way how many people are coming? ▶	
	I'm not sure. Probably 15 to 20. ▶	


imitative



Read & Speak


Speaking Assessment Demo



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NAVIGATION 

[Submissions](#) [Record answers](#)

Read the following passage as clearly as you can.

 There are over 6,500,000,000 people living on our earth. Only 5% or 300,000,000 of the earth's population live in the United States, but Americans own almost 30% of all of the cars in the world.

Comment (optional)

imitative



Listen & speak

Audio
prompt

Question **2**
Not yet answered
Marked out of 1.00
Flag question
Edit question

Listen and repeat.

Navigation
1 2 3 4
Finish attempt ...
Start a new preview

▶ 🔊 ● -0:04

Target response:

- how often do you eat at fastfood restaurants

Start recording

Score:

Speak


Previous page Next page




Random order words

Speaking Assessment Demo

[Home](#) ▶ [My courses](#) ▶ [Miscellaneous](#) ▶ [Speech](#) ▶ [Speech assessment](#) ▶ [Random Order Words](#)


NAVIGATION 



[Submissions](#) [Record answers](#)



ADMINISTRATION 



- Speaking assessment administration
 - Edit settings
 - Locally assigned roles
 - Permissions
 - Check permissions
 - Filters
 - Logs
 - Advanced grading
- Course administration
- Switch role to...
- My profile settings

The following words are NOT in order. Speak the words in the correct order to make a sentence or question.

 [you] [did] [What] [arrive] [time]

 Listen to the phrases and speak in the correct order. 

Comment (optional)


intensive




Speak best response

Speaking Assessment Demo



[Home](#) ▶ [My courses](#) ▶ [Miscellaneous](#) ▶ [Speech](#) ▶ [Speech assessment](#) ▶ [Speak best response](#)


NAVIGATION  [Submissions](#) [Record answers](#)

ADMINISTRATION 

- ▼ Speaking assessment administration
 - [Edit settings](#)
 - [Locally assigned roles](#)
 - [Permissions](#)
 - [Check permissions](#)
 - [Filters](#)
 - [Logs](#)
 - [Advanced grading](#)
- ▶ [Course administration](#)

Listen to the question and speak the best response, A, B, or C.

 [everyday] ----- [for 3 hours] ----- [in between classes] 



Comment (optional)

responsive

Retell a story



Speaking Assessment Demo

[Home](#) ▶ [My courses](#) ▶ [Miscellaneous](#) ▶ [Speech](#) ▶ [Speech assessment](#) ▶ [Retell a story](#)

NAVIGATION



[Submissions](#)

[Record answers](#)

ADMINISTRATION



▼ Speaking assessment administration

- [Edit settings](#)
- [Locally assigned roles](#)
- [Permissions](#)
- [Check permissions](#)
- [Filters](#)
- [Logs](#)
- [Advanced grading](#)

▶ [Course administration](#)

Listen to the story and retell the story.



[Listen to Peter's story.](#) ▶



Comment (optional)

responsive

Open-ended question



Learn English (en) You are logged in as Paul Daniels (Log out)

NAVIGATION Submissions Record answers

ADMINISTRATION

- Speaking assessment administration
 - Edit settings
 - Locally assigned roles
 - Permissions
 - Check permissions
 - Filters
 - Logs
 - Advanced grading
- Course administration
- Switch role to...
- My profile settings
- Site administration

Talk for 30 seconds.

Comment (optional)

Save recording and comments

extensive

Presentation practice



Hometown presentati x

Secure | <https://lms.kochi-tech.ac.jp/mod/sassessment/view.php?id=24090&a=add>

Apps Hawaii Health Japan KUT Research Tech Web Hosts Hosting Services Misc Reference Google Bookmark Library KUTLMS Other bookmarks





















KUTLMS English (en) Paul Daniels

English Projects (Daniels)

Home > 2017年度 > 基礎科目 (英語) > 1st year English Courses > 2017-EP-Daniels > Day 3: Project 1 > Hometown presentation speaking practice

Submissions Record answers Summary

Presentation speaking practice.

 Practice speaking (Slide 1)	
 Practice speaking (Slide 2)	
 Practice speaking (Slide 3)	
 Practice speaking (Slide 4)	
 Practice speaking (Slide 5)	
 Practice speaking (Slide 6)	
 Practice speaking (Slide 7)	
 Practice speaking (Slide 8)	
 Practice speaking (Slide 9)	
 Practice speaking (Slide 10)	



Describe a picture

Question 3
Not yet answered
Marked out of 1.00
Flag question
Edit question

Quiz navigation
1 2 3 4
Finish attempt ...
S

A

Describe what the people are doing in the picture.

Start recording

Score:

Previous page Next page


Speak

Describe what is happening in the picture.



Watch video and speak [Shadowing]

Watch



little black boys and black girls will be able to join hands with little white boys and white girls

[0.34] I have a dream
[1.22] that my four little children
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[6.64] where they will not be judged by the colour of their skin
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[27.62] I have a dream today!

Read along

Speak

Start recording

Score: 97



Adding video subtitles & captions

Insert media

Link Video Audio

Video source URL
https://ftrc.biz/moodle/draftfile.php/117/...

Add alternative source

- Display options
- Advanced settings
- Subtitles and captions

Subtitles Captions Descriptions Chapters Metadata

Subtitle track URL
https://ftrc.biz/moodle/draftfile.php/117/user/draft/85949 Browse repositories...

Language
English (en)

Label

Insert media

EnglishSubtitles (1).vtt - Notepad

File Edit Format View Help

WEBVTT
Kind: captions
Language: en

00:00:00.340 --> 00:00:01.000
I have a dream

00:00:01.220 --> 00:00:04.140
that my four little children

00:00:05.360 --> 00:00:06.640
will one day live in a nation

00:00:06.640 --> 00:00:08.640
where they will not be judged by the colour of

00:00:11.920
of their character.

00:00:11.920 --> 00:00:13.920

File manager

Files

EnglishSubtitle I have a

Computerized scoring



Sample conversation

https://learn.core.kochi-tech.ac.jp/moodle/mod/sassessment/view.php?id=...

Speaking Assessment Demo

Home ▶ My courses ▶ Miscellaneous ▶ Speech ▶ Speech assessment ▶ Sample conversation

Submissions Record answers

Sample

Student	Student answer	Text analysis
 Paul Daniels February 22, 2016 @ 06:37 [edit] [delete]	1. 100% Answer: you're right if I get some soft drinks can you get some snacks Target answer: You're right. If I get some soft drinks can you pick up some snacks.	Total: 100% Total Word Count: 27 Total Unique Words: 22
	2. 100% Answer: I think 5 bags of chips should be enough Target answer: I think 5 bags of chips should be enough.	Number of Sentences: 3 Average Words per Sentence: 9
	3. 100% Answer: yes could you get some please Target answer: Yes. Could you get some please.	Hard Words: 0 (0%) Lexical Density: 81.48%

Lexical density= number of content words / by total words

Fog= (avg. # of words + % of words of 3 or more syllables) x 0.4



Phrase1 (spoken):

Which witch is which?

Phrase2 (target):

Which witch is which?

Check

phonetic lines:

```
array(5) {  
  ["spoken"]=>  
  object(stdClass)#1 (4) {  
    ["raw"]=>  
    string(21) "Which witch is which?"  
    ["clean"]=>  
    string(20) "which witch is which"  
    ["words"]=>  
    array(4) {  
      [0]=>  
      string(5) "which"  
      [1]=>  
      string(5) "witch"  
      [2]=>  
      string(2) "is"  
      [3]=>  
      string(5) "which"  
    }  
    ["phonetic"]=>  
    array(4) {  
      [0]=>  
      string(8) "W IH1 CH"  
      [1]=>  
      string(8) "W IH1 CH"  
      [2]=>  
      string(5) "IH1 Z"  
      [3]=>  
      string(8) "W IH1 CH"  
    }  
  }  
}
```

phonemes

Scoring Algorithm



string similarity tool

```
similar_text ( string $first , string $second [, float &$percent ] ) : int
```

First string:

The diameter of the earth is 12,756 kilometers.

Second string:

The diamond of the hearth is 12,000 meters.

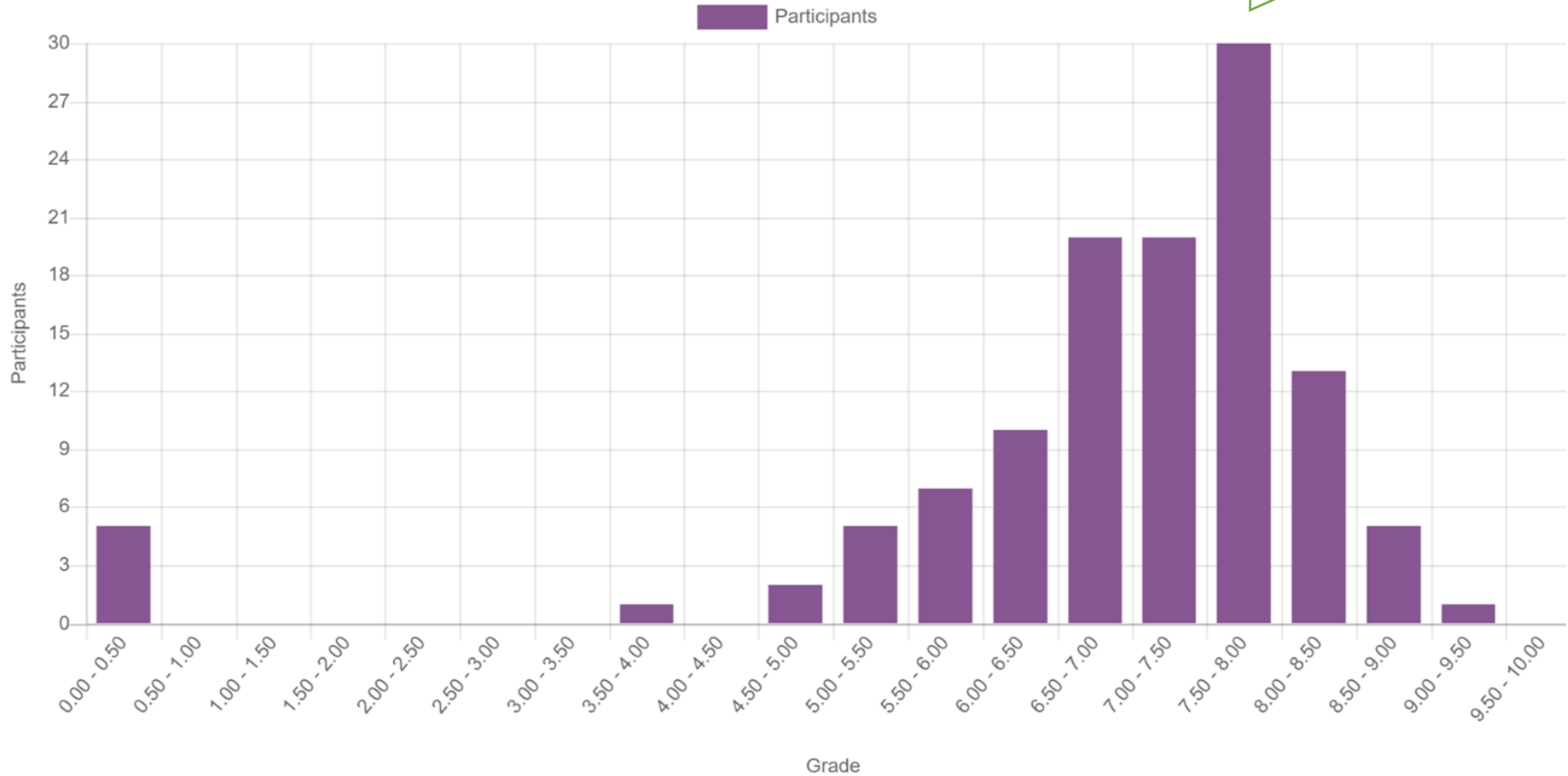
Limit: (default: 0.4)

[Check similarity](#)

Strings match around: 80%.

Speaking Task 1

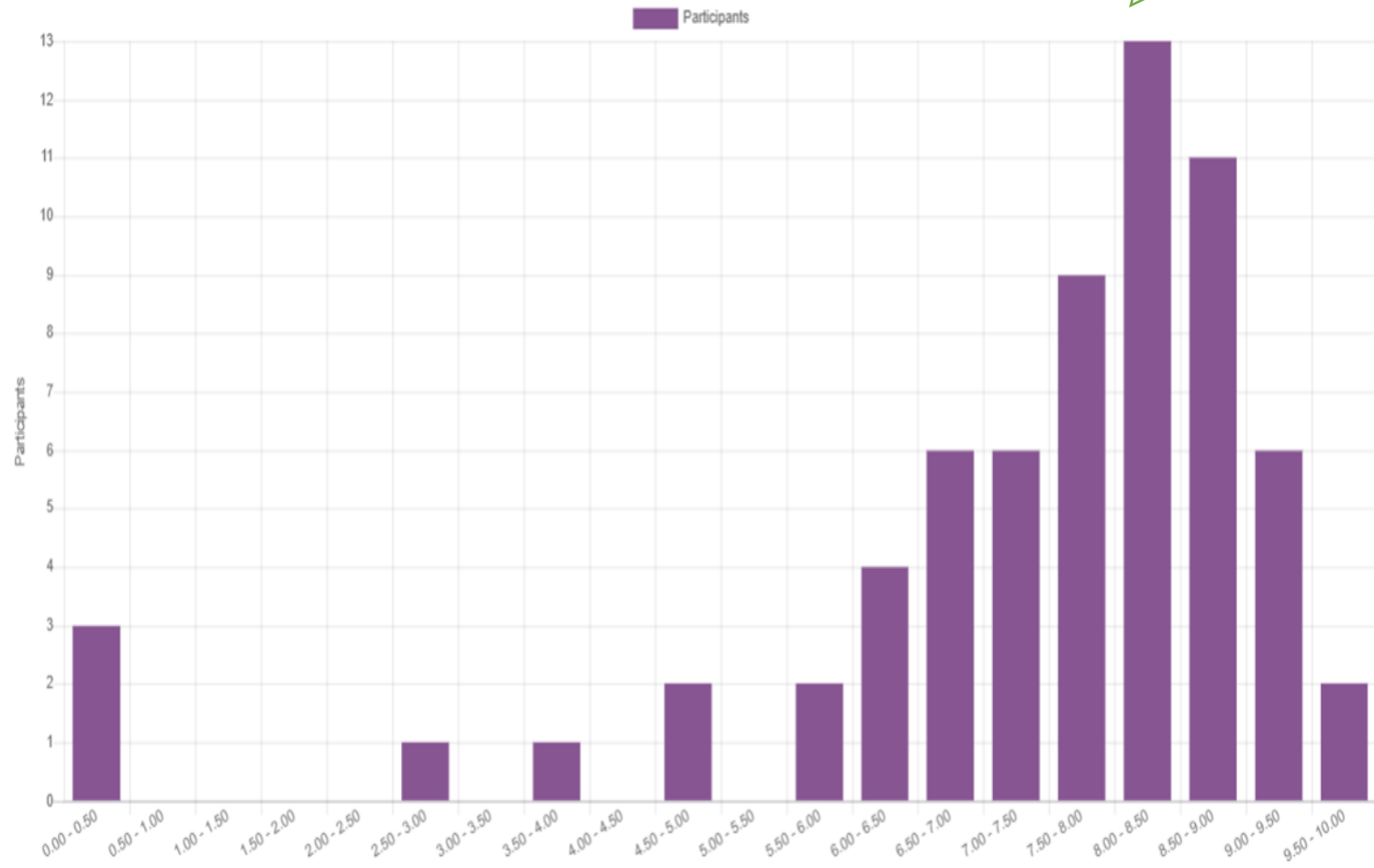
75-80%



Speaking Task 2

80-85%

Overall number of students achieving grade ranges





1. transcribe speech

- *webkitSpeechRecognition* API

```
var rec = new webkitSpeechRecognition();
```

- **More information:**

<http://updates.html5rocks.com/2013/01/Voice-Driven-Web-Apps-Introduction-to-the-Web-Speech-API>



2. capture speech

- Recorder.js (.wav) → getUserMedia
- (.wav) to (.mp3) → libmp3lame.js
- **Tools:** *getUserMedia* API, *record_wav.js* & *libmp3lame.js* JavaScript
- **More information:**
- <http://typedarray.org/from-microphone-to-wav-with-getusermedia-and-web-audio/>
- <http://www.smartjava.org/content/record-audio-using-webrtc-chrome-and-speech-recognition-websockets>
- <http://stackoverflow.com/questions/16810450/html5-getusermedia-record-audio-save-to-web-server-after-certain-time>



3. capture & transcribe speech

- Audio capture → Recorder.js
- Transcribe audio → WebkitSpeechRecognition API
- **Tools:** *speech_recognition* module
- **More information:**
https://github.com/Uberi/speech_recognition

Let's try!



Go to → hokulele.us

Contact → [daniels @ kochi-tech.ac.jp](mailto:daniels@kochi-tech.ac.jp)

Download → <https://github.com/e-rasvet/>