OnTask: A tool to support
the provision of personalised
messages at scale

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www.ontasklearning.org

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OnTask: A tool to support the provision of personalised messages at scale
Data

Learning Analytics

Predictive models
OnTask: A tool to support the provision of personalised messages at scale

- Data
- Learning Analytics
- Predictive models
- Large cohorts
- Support Actions
- Personalised messages
Feedback is one of the most, if not the most important tools for supporting learning. Giving effective feedback has also been found to be one of the most powerful educational interventions to improve learning. According to Shank (2017) effective feedback positively affects learning outcomes and motivation to learn, and can help build accurate schema. John Hattie (2011) found that giving feedback has an extremely large effect on learning, with an effect size of 0.79 (2X the average of all other educational effects)…
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Data

Learning Analytics

Predictive models

Feedback

Support Actions

Personalised messages

Large cohorts
Instructors manage workflows

![Workflows page](image)

**Workflows**

- **New workflow**
- **Import workflow**

**Favourites**

<table>
<thead>
<tr>
<th>BIOL1011</th>
<th>Project rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course on Cell Biology</td>
<td></td>
</tr>
<tr>
<td>14 rows, 69 columns, 9 actions.</td>
<td></td>
</tr>
<tr>
<td>15 rows, 5 columns, 1 action.</td>
<td></td>
</tr>
</tbody>
</table>

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A workflow contains a table
## Manual data upload/merge

<table>
<thead>
<tr>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ CSV</td>
<td>Upload data contained in a CSV file (typically saved using a spreadsheet or other data manipulation package). If the table is empty, the data will be simply loaded detecting those columns that have unique values for every row. If the workflow table has data, the operation will ask you to match a key column in your table with a key column in the file to upload so that the rows can be matched.</td>
</tr>
<tr>
<td>+ Excel</td>
<td>Upload data from Excel file. Given a file name and the name of a sheet, upload or merge the content of the Excel file. If the workflow table has data, the operation will ask you to match a key column in your table with a key column in the file to upload so that the rows can be matched.</td>
</tr>
<tr>
<td>+ Google Sheet</td>
<td>Upload data from a Google Sheet file. Given the URL pointing to a publicly available Google Sheet upload or merge its content. If the workflow table has data, the operation will ask you to match a key column in your table with a key column in the sheet so that the rows can be matched.</td>
</tr>
<tr>
<td>+ S3 Bucket CSV</td>
<td>Upload data from a CSV file in a S3 Bucket. Given the key, secret, bucket name and file path to a CSV file, upload or merge its content. If the workflow table has data, the operation will ask you to match a key column in your table with a key column in the sheet so that the rows can be matched.</td>
</tr>
<tr>
<td>+ SQL Connection</td>
<td>Upload data stored in a remote database using pre-defined SQL connection.</td>
</tr>
<tr>
<td>+ Athena Connection</td>
<td>Batch upload data stored in a database using a pre-defined Amazon Athena connection.</td>
</tr>
</tbody>
</table>
Automatic data upload/merge

**Table Json Merge**

Basic methods to perform JSON merge.

get: Retrieves the data frame attached to the workflow and returns it labeled as "data_frame"

post: Request to merge a given data frame with the one attached to the workflow.

GET `/table/merge/`

HTTP 200 OK
Allow: GET, PUT, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

```json
{
    "how": "",
    "left_on": "",
    "right_on": "",
    "src_df": {
      "SID": {
        "0": 
        "1": 
        "2": 
        "3": 
        "4": 
        "5": 
        "6": 
        "7": 
        "8": 
        "9": 
        "10": 
        "11": 
        "12": 
        "13": 
    },
    "email": 
```
Explore table column values

<table>
<thead>
<tr>
<th>SID</th>
<th>email</th>
<th>Surname</th>
<th>GivenName</th>
<th>MiddleInitial</th>
<th>Gender</th>
<th>UOS Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>300773633</td>
<td><a href="mailto:euhz6532@bogus.com">euhz6532@bogus.com</a></td>
<td>Jen</td>
<td>Jie</td>
<td>M</td>
<td>male</td>
<td>ELON3509</td>
</tr>
<tr>
<td>315500979</td>
<td><a href="mailto:zqdk2609@bogus.com">zqdk2609@bogus.com</a></td>
<td>Iredale</td>
<td>Flynn</td>
<td>M</td>
<td>male</td>
<td>ELON3509</td>
</tr>
<tr>
<td>317547296</td>
<td><a href="mailto:ckrn7263@bogus.com">ckrn7263@bogus.com</a></td>
<td>Prenzel</td>
<td>Blake</td>
<td>I</td>
<td>male</td>
<td>ELON3509</td>
</tr>
<tr>
<td>319549896</td>
<td><a href="mailto:ttqp9766@bogus.com">ttqp9766@bogus.com</a></td>
<td>Chien</td>
<td>Jin</td>
<td>Y</td>
<td>male</td>
<td>ELON3509</td>
</tr>
<tr>
<td>320250819</td>
<td><a href="mailto:tjk6150@bogus.com">tjk6150@bogus.com</a></td>
<td>Tuan</td>
<td>Donglu</td>
<td>D</td>
<td>female</td>
<td>ELON3509</td>
</tr>
<tr>
<td>326285587</td>
<td><a href="mailto:isim6886@bogus.com">isim6886@bogus.com</a></td>
<td>Pan</td>
<td>Li Na</td>
<td>Y</td>
<td>female</td>
<td>ELON3509</td>
</tr>
<tr>
<td>330794979</td>
<td><a href="mailto:olie8242@bogus.com">olie8242@bogus.com</a></td>
<td>Chang</td>
<td>Lian</td>
<td>M</td>
<td>female</td>
<td>ELON3509</td>
</tr>
<tr>
<td>352120481</td>
<td><a href="mailto:ucdx8510@bogus.com">ucdx8510@bogus.com</a></td>
<td>Shao</td>
<td>Tain</td>
<td>L</td>
<td>male</td>
<td>ELON3509</td>
</tr>
<tr>
<td>360594548</td>
<td><a href="mailto:euho9752@bogus.com">euho9752@bogus.com</a></td>
<td>Vida</td>
<td>Bailey</td>
<td>C</td>
<td>male</td>
<td>ELON3509</td>
</tr>
<tr>
<td>363393232</td>
<td><a href="mailto:tdrv2640@bogus.com">tdrv2640@bogus.com</a></td>
<td>Hague</td>
<td>Joel</td>
<td>K</td>
<td>male</td>
<td>ELON3509</td>
</tr>
</tbody>
</table>

Showing 1 to 10 of 14 entries

© OnTask Project 2021 | Version: B.7.2 | Accessibility
Explore table column values
... and actions

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
<th>Last executed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badges</td>
<td>📦</td>
<td>A badge reflecting the activity with respect to the videos</td>
<td>—</td>
</tr>
<tr>
<td>Comments about how to prepare the lecture (Week 4)</td>
<td>📦</td>
<td>A message commenting on the videos they watched for Week 4</td>
<td>—</td>
</tr>
<tr>
<td>Initial motivation</td>
<td>📦</td>
<td>Motivating message depending on the program enrolled. This action sends email using the CANVAS platform</td>
<td>—</td>
</tr>
<tr>
<td>Midterm comments</td>
<td>📦</td>
<td>Comment the midterm scores divided by topic</td>
<td>—</td>
</tr>
<tr>
<td>Project feedback</td>
<td>📦</td>
<td>Provide feedback about the project using the results from the rubric</td>
<td>2019-11-04 09:49:55 +1100</td>
</tr>
<tr>
<td>Send JSON to remote server</td>
<td>🔄</td>
<td>Send a JSON object to a remote server (outside this platform)</td>
<td>—</td>
</tr>
<tr>
<td>Student comments Week 1</td>
<td>📦</td>
<td>Feedback about today's lecture</td>
<td>—</td>
</tr>
<tr>
<td>Students that failed the midterm</td>
<td>📦</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Suggestions about the forum</td>
<td>📦</td>
<td>Message to remind those students that haven't visited the forum to do so.</td>
<td>—</td>
</tr>
</tbody>
</table>
... and actions

- Personalised email
- Personalised page
- Rubric feedback
- Send report
- Survey (Input)
Email to a subset of students (filter)
Email to a subset of students (filter)

Dear {{ GivenName }}

This is just a reminder to let you know that the activities in this course will rely on the discussions appearing in the forum. See if you can take a look at the messages currently there and let us know if you need any additional information from us.

Regards,

{{ Coordinator name }}

{{ Course name }}
Email to a subset of students (filter)

Dear Tain,

This is just a reminder to let you know that the activities in this course will rely on the discussions appearing in the forum. See if you can take a look at the messages currently there and let us know if you need any additional information from us.

Regards,

Sarah Jones -- Course coordinator

Cell Biology
Email for multiple sub-cohorts
Email for multiple sub-cohorts

Dear {{ GivenName }}

Here are the comments about your answers to the midterm exam (ordered by topic).

**Chemistry and Molecules of Life**

{% if T1_LOW %}You need to review the concepts in this topic. It is important that you identify those molecules that are important in a living organism, and differentiate them from other molecules. Also, make sure you review the basic steps of the chemical reactions we discussed in class.{% endif %}

{% if T1_MID %}You need to review this topic again. Make sure you easily identify which molecules are present, for example, inside a cell and differentiate them from other.{% endif %}

{% if T1_HIGH %}Good work with this topic!{% endif %}

**Cell function and structure**

{% if T2_LOW %}Go back and review in depth this chapter. You need to be able to identify the parts of the cell, and more importantly, the role they play in the various functions. It may help to build first a table of these functions. Then a table of the parts of the cell, and
Email for multiple sub-cohorts
Examples
Large, first-year undergraduate course

Use Propensity Score Matching to divide data

$n_{2015}=266$: no feedback given (control)

$n_{2016}=277$: no feedback given (control)

$n_{2017}=241$: personalised feedback given (treatment)

Impact of LA-based feedback on students' self-regulated learning and academic achievement

What is the impact of LA-based, process feedback on students' (a) self-regulated learning and (b) academic performance in a course?

![Graph showing estimated marginal means for completion rate of Connect e-book activities over 3 phases.](image)

**Fig. 5.** Estimated marginal means for completion rate of Connect e-book activities over 3 phases.

**Difference in final course mark was strongly significant,** with the treatment group achieving higher marks than the group without feedback.

Analysis of focus groups from four courses to understand students’ sensemaking of personalised, la-based feedback.

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• Addressing retention and student satisfaction

• Communication personalised based on collected data

• Scalable provision of coaching support

• Deployed and used in institutions across the world both in face to face and online courses

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