# SEDA eDAT Project Final Report December 2019

## Project title:

Helping designers design: Proving learning designs using eDAT and Learning Analytics methods

## Who you are:

Dr Helen Walmsley-Smith, Staffordshire University

Patrick Lynch, Hull University (participated in the project until October 2018)

## Why you chose the project

Learning analytics offers opportunities to evaluate the effectiveness of blended and online learning designs to develop and improve guidance for tutors and learning designers. Learning analytics can include analysis of VLE data, student data including retention and attainment together with blended and online learning design data. However, quantifying learning designs is challenging and obtaining consistent and shareable learning design data is difficult (Walmsley-Smith, Machin, & Walton, 2018).

This project aimed to provide a proof of concept for the eDAT as an effective tool to provide quantifiable feedback on blended and online learning designs. The project will test the usefulness of the eDAT when categorising a variety of learning activities and representing the learning design in a quantified, shareable and understandable format. The eDAT focusses on learning activities that are associated with higher retention and include interaction and feedback activities (Croxton, 2014; Hattie, 2012). See Appendix 1 for a full list of the learning activity types used in the eDAT. The blended and online learning designs will be compared to student attainment and retention data. This will provide an effective and reproducible evaluation of the design for tutors and learning designers that will inform further development.

## What you did

* Ethical approval for both Staffordshire University and Hull University obtained Sept 2018
* Project webpage set up: <http://blogs.staffs.ac.uk/bestpracticemodels/seda-edat-project/>
* Completion of common documentation for workshops at Staffordshire and Hull including information and consent forms, data capture forms and reflection forms
* Completion of plans for completing learning analytics on VLE activity (although unable to continue with this)
* Explored ways to obtain module level retention and attainment data via SITS
* Workshops for distance learning tutors to use eDAT to analyse DL courses ran from Jan 2019 – October 2019 attended by a total of 12 academic staff.
* Updated eDAT, spreadsheet and guidance for use
* Disseminated via internal staff development and external sessions (see below)

## Learning Design Data collected

Distance learning module leaders and tutors were invited to attend a workshop to introduce the eDAT and complete the analysis. Several members of staff attended in small groups or 1-1.

The eDAT is designed to be easy for distance learning tutors to use to categorise their learning activities, however, some did have difficulties mapping their design to the eDAT chart. This was due to differences in the basic format and structure of the module. For example, some tutors had a detailed list of weekly activities for students to complete, and others had a range of resources and exercises that students completed at their own pace. In addition, the number and type of activities in a module varied across the range of modules. The eDAT has been updated following these comments.

Summary data below shows the results from the mapping activity. Some tutors were not able to obtain retention data for the module and so this data has been excluded from analysis.

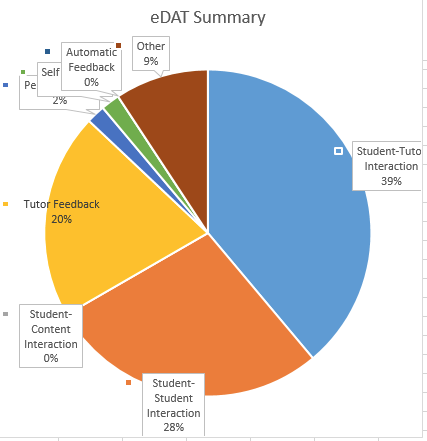
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Ref** | **Level** | **Number of activities** | **Number with interaction** | **Number with feedback** | **Number of students** | **Pass rate** |
| 1 | 7 | 41 | 2% | 10% | 18 | 66% |
| 2 | 5 | 13 | 0% | 15% | 18 | 78% |
| 3 | 4 | 13 | 0% | 8% | 18 | 78% |
| 4 | 4 | 21 | 43% | 19% | 72 | 87% |
| 5 | 6 | 23 | 35% | 30% | 49 | 98% |
| 6 | 7 | 38 | 18% | 18% | 45 | 87% |
| 7 | 5 | 16 | 19% | 19% | 23 | 87% |
| 8 | 7 | 6 | 66% | 33% | 8 | 87% |
| 9 | 7 | 45 | 80% | 29% | 6 | 83% |
| 10 | 7 | 58 | 3% | 72% | 3 | 100% |
| 11 | 4 | 26 | 4% | 65% | 124 | 84% |
| 12 | 7 | 9 | 22% | 100% | 11 | 100% |
| 13 | 7 | 30 | 40% | 60% | 15 | 93% |
| 14 | 6 | 24 | 8% | 50% | 62 | 82% |

## Commentary on data

Tutors were invited to participate in the analysis, and we were unable to obtain analysis of a wide range of modules. Although this is a small sample of courses, and some had small numbers of students enrolled, the following are noted:

* Modules 1, 2 and 3 had the lowest pass rates and also had lower ratio of activities with interaction and feedback (less than 15%)
* Modules 6 and 7 had high pass rates and 18-19% of all activities with interaction and feedback
* The other modules had high pass rates and either high rates of interaction or feedback (30% or above), but not both.

## Learning Design Representation

The image to the right is an example of the learning activities in one of the modules. This is created automatically as the user inputs their activity details and shows the relative proportion of activity across the different interaction/feedback types. This format is simple to set up on Excel and provides a clear visualisation for tutors. It is similar to the Learning Designer (<https://www.ucl.ac.uk/learning-designer/>) that has been found to be an effective tool (Laurillard, Kennedy, Charlton, Wild, & Dimakopoulos, 2018)

## What you’ve learned

* The focus on interaction and feedback activities is a powerful way for DL tutors to highlight areas that need attention on their course (over and above activity types).
* The variety of learning design formats didn’t all suit the eDAT excel spreadsheet – e.g. designs with the same format of activities each week. The eDAT has now been updated
* Challenges arose with including activities that have multiple forms of feedback e.g. informal WeChat.
* The analysis showed that some tutors marked activities as including multiple forms of interaction on the eDAT, but this skewed the results. The updated form only permits tutors to categorise an activity with a single type of interaction or feedback
* Retention data for individual modules was challenging to obtain. Our corporate data systems don’t collect retention data by module – only by course. It was cumbersome to ask tutors to identify how many students had enrolled on their course and how many had withdrawn as they may not necessarily see the early enrolments. Retention is not necessarily a valid measure of learning design quality. In addition, some of the analysed modules were from Ministry of Defence courses which typically had very highly motivated and well supported students.
* Attainment data was obtained for the module. The table above shows attainment data for every occurrence of each module that ran in 18/19. However, not all modules recorded attainment in the same way – some mapped the results against degree classifications, and some as distinction/merit/pass/fail. The table above has summarised these into a % of pass rate.
* Further research would be useful, in particular to include student satisfaction on the module.

## Tutor comments:

Tutors made a variety of comments during the workshop and whilst using the eDAT that demonstrates they were focussing their attention on the use of interaction and feedback activities that were (or were not) included in their module. Here is a sample:

* *Plans to increase the student-student interaction, building a student learning community giving a sense of belonging and identity.*
* *If it [an activity] is not required, does it need to be in the module? Informal learning is not directed. Assessment does not specify feedback (implied) this will be highlighted. Discussion forum not directed but informal*
* *Lack of detailed SOW [scheme of work], limited feedback, no interaction. Lack of collaboration – both for the assignment and learning journey. Better use of discussion boards to encourage use – build into learning profile.*
* *More encouragement and training for use of forums, more automated feedback, investigate opportunities for use of auto feedback quizzes, collaboration*
* *Although there is feedback, mostly self and automatic, there is very little interaction designed into the module*
* *At the moment this module is heavily dependent on self-study utilising powerpoint resources and further reading. Retention is a struggle … there is an aim to improve the range of activities*
* *Assessment does not specify feedback (implied) this will be highlighted. There is a lot of reading involved and feedback in discussions, but this is not formalised and so will be considered. The use of Padlet and Collaborate adds to the richness but again not specified but implied. This is a good exercise to highlight some of the learning and feedback, I will now look at this and possible going further for my own.*

## How you are/have told others about your work

* I attended the JISC Student Experience Experts meeting to present the project aims in Oct 2019 <https://www.jisc.ac.uk/events/student-experience-experts-group-meeting-17-oct-2019#resources>
* The project has also been discussed at LD-CIN meetings (<https://sites.google.com/site/learningdesignsig/home>) where useful feedback has been given.
* The eDAT will be presented at our upcoming internal TEL Showcase

## What outcomes or impact has there been from your work:

* An approach to evaluating distance learning designs using the eDAT is now included in our short course for distance learning tutors called: ‘Designing and Delivering Online Distance Courses’. To date 34 staff have attended and more sessions are planned.
* The project will also be shared with our PgCHPE students as part of a session on ‘Evaluating TEL’
* A new version of the eDAT has been developed that has been adapted for multiple types of learning design and will be available from the project page.
* A project has started in our Business School to use the eDAT as part of a review and update of all their DL and blended learning provision.
* An online network of distance learning tutors across the university has been set up to support and share best practice.

## Contact details

For any correspondence, please contact Dr Helen Walmsley-Smith [h.walmsley-smith@staffs.ac.uk](mailto:h.walmsley-smith@staffs.ac.uk)

## References

Croxton, R. A. (2014). The Role of Interactivity in Student Satisfaction and Persistence in Online Learning. *Journal of Online Learning and Teaching*, *10*(2), 314–325.

Hattie, J. (2012). *Visible Learning for Teachers: Maximizing Impact on Learning*. London: Routledge.

Laurillard, D., Kennedy, E., Charlton, P., Wild, J., & Dimakopoulos, D. (2018). Using technology to develop teachers as designers of TEL: Evaluating the learning designer. *British Journal of Educational Technology*, 1–15. https://doi.org/10.1111/bjet.12697

Walmsley-Smith, H., Machin, L., & Walton, G. (2018). The E-Design Assessment Tool: An evidence-informed approach towards a consistent terminology for quantifying online distance learning activities. *Research in Learning Technology*.

## Appendix 1: eDAT activity details:

The eDAT includes a simple categorisation for each activity in an online course. For each activity identify if interaction is present and which type:

1. With the tutor, e.g. online webinar/ lecture, 1-1 tutorial, coaching session, email, phone etc.
2. With other students, e.g. forum discussion (may include tutor), group work, peer assessment, adding comments to peer wikis/blogs etc.
3. With interactive content, e.g. computer simulation, multimedia interactions etc. NB, don’t include interaction with text/video (count these as ‘other’)

For each activity identify if feedback is present and which type:

1. From the tutor, e.g. formative or summative feedback or grades etc.
2. From peers, e.g. structured peer-assessment exercise, grading activity etc.
3. As self-feedback e.g. using model answers, self-reflection, trial and error exercises etc.
4. Automatic feedback e.g. from computer simulation, computer-marked test etc.

If no interaction or feedback for an activity, add a tick to the Other column