Submission to the Data Management Engagement Award – The Impact! Game

Applicant: Cranfield University Library Service (Georgina Parsons, Emma Turner)

Background: We have developed a prototype board/card game called The Impact! Game. It aims to engage research staff and students by testing their existing knowledge and encouraging them to learn more about best practice in research data management, open access, and other research support areas. It is used in academic liaison activities and at University research events. Our proposal is to use this foundation to develop a more flexible game that can be easily adapted and used by other institutions, including in other countries, settings and disciplines.

Feasibility: The game has already been created as a successful prototype so there is a very low risk that any design/production work could fail. The development plan relies on library staff and researcher input which we believe to be achievable in the timeframe based on our experience with the prototype to date. Existing relationships would be used to offer the game to university libraries in other countries (e.g. Sweden, Netherlands, South Africa, Australia) with the aim of recruiting testers in a different research context (i.e. with different policies, regulations, funders).

Impact: There are many studies evidencing the benefits of incorporating games into learning, as long as there are clear educational outcomes alongside entertainment value. The game introduces key concepts in a fun and engaging way, designed so that after playing it researchers will have arrived at a clearer understanding of the practical ways they can ensure compliance and increase their impact through good data management practices. It introduces and reinforces key ideas by testing existing knowledge and allowing players to gain some new knowledge which they can build on in the future.

We have observed that interactions between players during the course of the game lead to peer learning, and connections being made between pieces of information to gain a more complete understanding of the research landscape. An additional unexpected impact was on library staff: we have learnt a lot about the attitudes and opinions of the players, including some misconceptions that we have been able to correct, thereby improving our service.

Transferability: We used the Ivory Game Maker site for our prototype, which allows all game elements to be made public for others to purchase. We would develop a generic board, box, card box and pieces. We will investigate alternative providers for the cards, to enable templates to be editable and therefore allow for geographic variation in the questions. We will aim for institutions to be able to choose from certain pre-designed sets of cards or to create, add, and share their own cards (e.g. a medical library may create domain-specific questions); the ability to select those most locally relevant ensures interdisciplinarity and transferability.

The question cards can be used independently of the board game for a shorter activity, or informally, such as when the library has a stand at events. We then use them to start a discussion with researchers who talk to us in passing. Further, the questions can be reused in other formats e.g. transferring to an online quiz system. We will explore such online service options (e.g. Kahoot) for use in instructional sessions for larger groups, to investigate what we can make available for immediate reuse.

Value for money: The project work is low budget and the project outputs are cheap to reuse. Organisations can order a full board game set from Ivory (https://gamemaker.ivory.co.uk/) for a cost of under £40, covering a quad-fold board, game box, playing card box, four counters, and a die. Card sets will be under £5 but are also likely to be printable on local machines.

Board game details

The board is a simple design (shown right), similar to snakes and ladders, where the first player to reach the end square wins. Further testing is required to finalise the number of squares and shortcuts, and design features (e.g. adding marked spaces for the cards). On each turn, a player takes an instruction card, which is one of three types:

A. 20 cards: Giving them a good/bad scenario and they move forward/backward as a result. *E.g. "Uh-oh, you forgot to get ethical approval for your project before starting data collection. Go back two spaces." or "You saved your data in csv format with clear documentation – it's reusable and thus has already had two citations! Roll the die and go forward the number of spaces shown."*

B. 10 cards: Asking them a question and they move forward/backward depending on their answer. *E.g. "Have you written a Data Management Plan for your project? If yes, go forward two spaces. If no, go back two spaces."*

C. 20 cards: Asking another player to read them a question card (with the player choice also a potential talking point, to bring networking to the game). *E.g. "Question time! The player who tweeted most recently must read you a question card. Roll the die. If you get the answer right, move forward that number of spaces; if you don't, move back that number."*

The question cards (currently a set of 20) test the player's knowledge of aspects of research data management and related areas. *E.g. "Q. What does the CC-BY licence mean? A. That others can re-use the item for any purpose but they must attribute the author/s."*

Key elements of work plan

- Test and redesign board as required, aiming for a game that takes under 20 minutes to complete (with four players). Player feedback will be incorporated into the redesign.
- Update and expand card sets: increasing the number of instruction and question cards and ensuring there is a core set that is institution- and discipline-independent, with additional sets/templates available to cover local practice e.g. REF questions. Feedback will be gathered from researchers, Library, and Research Office staff, as well as calling for input from other institutions, using existing relationships and mailing lists.
- Identify online template provider for the cards, to enable sharing and selection of sets.

1. Testing the Impact! Game prototype at a Cranfield University event, December 2017.

Timeline and budget

Date	Work item	Budget
May to Sep 2018: gathering of feedback and further input via university workshops. Minimum four workshops to play the game and gather feedback, at Cranfield and elsewhere. Training required for European workshop leaders to be provided by Skype in advance.		
	Two workshops at Cranfield University, each for 20 delegates. Anticipated costs per workshop: - Room hire: free. - Catering: light lunch for 20 (£5.25/head); tea/coffee for 20 (£2.25/head); two jugs of juice (£5.95/jug) = £161.90/workshop.	£323.80
	Workshop at the Open University, for 20 delegates. Anticipated costs: - Room hire: free. - Travel: negligible, no budget required. - Catering: light lunch for 20 (£6.95/head); tea/coffee for 20 (£1.45/head); three litres of juice (£2.30/litre) = £174.90	£174.90
	Workshop at one further UK University (tbc), for 20 delegates. Anticipated costs similar: - Room hire: free. - Travel: to a university within 120mile round trip, at 40p/mile = £48. - Catering: light refreshments expect similar estimate = £162.	£210.00
	Workshop at Linköping University, Sweden. Details tbc; anticipated costs: - Room/catering: similar to Cranfield. - Delivery of a game set = c£60.	£221.90
	Workshop at University of Amsterdam and/or the Amsterdam University of Applied Sciences, Netherlands. Anticipated costs: - Room hire: free. - Catering: similar to Cranfield. - Delivery of a game set = c£60.	£221.90
May to Sep 2018: gathering of feedback and further input via external events. Attendance at relevant external events to present the work and gather additional feedback.		
16 May 2018	USTLG, Huddersfield, for Georgina Parsons and Emma Turner. Attendance confirmed; anticipated costs already approved for payment by Cranfield University: - No delegate fee. - Travel 300miles at 40p/mile = £120.	n/a - £120 paid by Cranfield
24-25 May 2018	DARTS, Dartington, for Georgina Parsons and Emma Turner. Attendance confirmed; anticipated costs already approved for payment by Cranfield University: - Delegate fee (inc one night accomm.) £199/person. - Travel 420miles at 40p/mile = £168. - Parking fee two days at £3/day = £6. - Additional night accomm. = £75/person.	n/a - £722 paid by Cranfield
	Attendance/workshop will be requested if an RDMF event is announced in London as expected according to the DCC schedules, around July. Anticipated costs based on previous RDMF: - Delegate fee £160. - Travel: return train £41.30. - Station parking £4.80.	£206.10 (one delegate)
May to Dec 2018: communication of progress.		
May to Dec 2018	Ongoing communication via JISC mailing lists to keep the community updated and engage further suggestions or volunteers for testing.	Free

Sep to Dec 2018: development of final game including online opportunities; launch.		
Sep to Nov 2018	Finalise question sets and board design, and determine best method/provider for card sets.	Free
Sep to Nov 2018	Investigate options for online provision of the questions, ideally to enable free reuse by others. Potential options to investigate (for one year): - Socrative Pro at $60/year. - Kahoot Plus at $10/month. - Moodle – if we can use our own VLE, this will be free.	£45
Dec 2018	Internal launch, at Research Support and Networking Event. Costs: - Three sets of the game, £55 each.	£165
Mar/Apr 2019	External launch at LILAC 2019 or ARMA 2019. Anticipated costs based on one delegate and LILAC 2017 prices: - Delegate fee: £399. - Three nights' accommodation at £70/night. - Travel: UK location so estimate £150 mileage costs. It is expected that this would be supported by Cranfield University.	£150 travel (£609 to be paid by Cranfield)
		TOTAL = £1718.60