

## Best of Ireland: A curious case of persistent learners: insight into serial MOOC participation

Conchúr Mac Lochlainn, Mairéad Nic Giolla Mhichíl, Elaine Beirne and Mark Brown

Dublin City University

**Abstract:** Why do learners join MOOCs? This is a straightforward question which underpins many MOOC studies. It also leads to two related but distinct questions: firstly, who are MOOC learners? Secondly, what are their goals and motivations in undertaking a MOOC (e.g Wang and Baker, 2018, Kizilcec and Schneider, 2015, Ferguson and Clow, 2015)? This research has been built on the reasonable assumption that understanding learner participation, and what kind of patterns may be implicit in learner continuation, are key, given the frequently sharp drop out of participation observed in MOOCs (Jordan, 2015). Less focus has been paid to understanding the serial MOOC learner (MacLeod, et al, 2015: 59), those who are engaged in sustained, multi-course participation. This is particularly salient when these courses form part of a series of courses which aim to build gradually upon those which have come before.

This study will report on a survey placed in 5 MOOC courses ran in succession, from the wider Irish 101-108 series of courses on FutureLearn, teaching both the Irish language and aspects of Irish culture to ab-initio learners. The instrument measured a range of social and psychological variables, yet this paper's concern is a simple question: whether the participants came to the course following the directly-preceding course, or whether they were 'new' learners that were joining for the first time? Significant flux in learner participation was observed, with a core group of learners appearing to complete in general succession, yet much churn was also observable on each course, suggesting that participation cannot be considered to follow a linear path by course designers from course to course. Data from this core instrument is supported by contextual, qualitative data on why learners continued and the effects their participation had on this continuation. Implications for MOOC design, particularly amongst suites of courses, are presented, as well as future research directions and how this research can be extended.

### *Introduction*

Understanding who MOOC learners are, and why they participate on a MOOC, has been a core research focus of this growing field. Several meta-analyses have now been conducted, with a focus on understanding the types of learners who participate, why MOOC completion rates are so low, what types of interventions and learning design might be conducive to allaying these trends (e.g Jordan, 2015, Ferguson and Clow, 2015). An assumption that naturally follows is that low 'completion' rates, using a traditional barometer, are undesirable, and yet this focus may reveal that the conception of completion is itself an incomplete metric (Henderikx et al, 2017: 2), in that different learners may have radically different goals both from each other, and from the same material in front of them (Ho et al, 2014). As such, completion itself may require some redefinition in this context, to *'requires a situation-specific approach to understand success and failure as signified by dropout'* (Henderikx et al, *ibid*). The ultimate aim of such learner-centred research is to design better courses, and yet perhaps lost in these specific studies is a phenomenon of increasing growth, is the serial MOOC learner and their sustained participation on MOOCs which are run sequentially on the same topic or subject. We define a serial MOOC learner as a person who completes more than one MOOC, but would include an additional caveat to our own context: as MOOCs have gradually become more formal, and begin to yield certificates and other forms of qualification (Nava, 2016), an increasingly-important aspect of continuation will be not purely in-course, but *intra-course*, and whether attrition, which is generally observable from week to week (sometimes quite dramatically, see Jordan, 2015), is also visible *from* course to course, where such series or suites of courses exist. There are clear design and pedagogical implications to the existence of the phenomenon. To understand it more fully a range of studies using multiple methods is required. These studies can clearly include learning

analytics but also they can avail of interpretive methods to provide in-depth insights into learning experiences. These insights many lead to a more nuanced understanding of serial participation. The general methodological makeup of studies on MOOCs, are usually from a predominantly quantitative framework of understanding (Veletsianos and Sheperdson, 2016: 214), with a focus within the literature on forms of data collection within MOOCs or from other MOOC-connected social-media. attempts to provide an initial attempt at providing supplemental qualitative evidence, which will be expanded in future research.

#### *Courses analysed*

The courses analysed in this study were Irish 101, 102, 103, 104 and 108 short courses, delivered by Dublin City University through the FutureLearn platform. The courses are language and culture MOOCs (LMOOCs), and have been highly successful, with a total of 40,000 registered learners across eight MOOCs in the past calendar year (with approximately one released per month). Each course builds upon the prior, and the eight courses together aim to enable a learner achieve a basic or A2 proficiency, under the Common European Framework of Reference (CEFR) for European languages. A general attrition in numbers was observable from course to course, and yet anecdotally from our observations many of the same names appeared in comments over courses. This led us to suspect that two trends were simultaneously present: a general, macro-statistical one, namely a decline in numbers (similar to Clow, 2013's 'funnel of participation'), and a particular sub-population of learners who continued learning across courses as intended over a significant stretch of time. As a consequence, we aimed to understand how widespread this pattern of participation might be, and what percentages of learners tended to join the MOOCs in sequence.

#### *Methodology*

A sub-set of data collected from a much larger psychological study instrument designed to measure the linguistic motivations of learners on the course, was used to form the basis of the findings reported in this paper. Within this instrument a series of questions asked learners about their prior experiences with the L2, their goals and desired proficiencies, as well as questions focusing on whether they possessed Ideal L2-selves. As an additional measurement, data were also collected regarding course completion, enabling us to compare the general trends of continued participation on the courses. Learners were asked to indicate on each course whether they had a) completed or b) commenced each of the prior MOOCs in the series. As this was a single data-collection point within each MOOC, we had no means by which to track individual respondents. Both open and closed questions provided into these questions the findings of which are reported below using both descriptive statistics and an interpretive frame. This pragmatic mixing of data sources is aimed to provide research which, in keeping with Maxwell and Loomis' (2003: 248), is focused both on providing a variance-based form of evidence, through the survey instrument, and certain process-based contextual information, through considering what means by which these general trends may emerge. The data forms a complementary analysis, and are two slightly-distinct ways of analysing this issue.

#### *Participants and sample size*

**Table 1 – Participants/sample size**

Course	Respondents (number)
Irish 101	719
Irish 102	181
Irish 103	71
Irish 104	141
Irish 108	51
Total	1,163

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A total of 1,163 replies were generated across five courses, providing a framework for comparison that is relatively robust. Response rates were typically double-digit of course participants. Irish 101 and 104 commenced at the same time, while Irish 102 and 103 were run directly following Irish 101. As a consequence, an observable drop-off in responses is visible. Data was not collected for Irish 105, 106 or 107 due to fears of sample fatigue observable clearly amongst our 102 and 103 learners.

*Results - general participation trends*

**Table 2 – General results**

Course	Never joined a previous course	Mixed participation*	Had completed all courses sequentially	N
101	77.61%	19.89%	<b>2.50%</b>	719
102	46.96%	23.76%	<b>29.28%</b>	181
103	30.88%	33.82%	<b>35.29%</b>	71
104	28.28%	26.21%	<b>45.52%</b>	148
108	26.53%	34.69%	<b>38.78%</b>	51

*\*Had completed or commenced at least one course in the sequence, but had not followed the clear sequence of completion.*

*General trend of survey results*

The general trend of results demonstrates a relatively-clear pattern, albeit with some variation. As might be expected, large numbers of participants (excepting those on the first course) followed a linear path, and demonstrated some degree of investment through participation in the previous courses. It also provides strong evidence however, that though most learners on the later courses had joined a previous course, they came to their current point through many different pathways. Similar to the high stratification within courses, with rapidly declining participation, a flip-side appears to be significant churn from learners who *join* each course, when it is one of a series. Indeed, approximately one-quarter of respondents on the second course onwards had not taken *any* previous course in the series, even in the later, more complex ones. It is also the case that a wide array of completion patterns is evident, even across a relatively small sample of courses: some learners had not completed the first or second, but decided to continue after attempting the third, while other learners were completing two or more (typically sequentially) at the same time. This flow (largely masked for simplicity in the ‘mixed participation’ category) suggests that for some learners the official course order is something that need not be followed. Indeed, on Irish 108, the *eight* in a steadily-increasingly difficult series of courses, only 40% of learners had completed the full set prior to commencement, and a full quarter had not completed any. This variation may have direct implications for course design and pedagogical approaches, which we will discuss in our interpretative analysis of the open-ended questions.

### *Qualitative data analysis*

In open-ended responses, respondents were asked what specific effect prior participation on the courses had on their continued, present participation, and provided some clues as to the actual process of learning. A wide array of responses were articulated, indicating that in keeping with Veletsianos Reich and Pasquini (2016), such questions provide strong evidence of ‘the life between big data logs’ (p.1). Most responses indicated that the courses had a positive effect on learner motivation, though this may be expected, given the learners are self-selecting (thus less motivated learners are very unlikely to respond to a survey):

*It was my first change of actually using Irish in practice, as I'm learning through Duolingo and there's no Irish speaker in thousands of kilometres. I feel I'm improving so much with those courses. – Learner A*

*In general my motivation has increased. I originally started Irish 101 with the intention of learning a little ABOUT Irish, rather than studying the language in any depth. But I'm still here (beginning 104) so I'm obviously taking the subject rather more seriously now than I expected to..- Learner B*

Providing some explanation for simultaneous learners however, and in keeping with several other studies (for example Zheng et al, 2015, Loizzo et al, 2017 and Veletsianos, Reich and Pasquini, 2016), a key aspect to emerge from qualitative responses, with direct relevance for our example, is the difficulty of finding time to complete what are structured, dated courses which do not remain open to learners indefinitely. Many learners referenced time commitments and consequent difficulty in finding a regular, steady time at which to complete activities and allowing space for absorbing content:

*It was more difficult that I initially thought, but I enjoyed learning Irish and I'm determined to finish all the courses and at least have some knowledge of the language. I rushed through Irish 101 because I'm behind schedule and that didn't help, but I'd like to review the content as soon as I catch up. I think once I let the content sink in it'll be a bit easier and I'll enjoy it even more. – Learner C*

*I would have liked to have more time with the previous online course, but it was enjoyable and a refreshing change from book-and-worksheets based learning. – Learner D*

It is particularly-revealing that Learner C appears aware of there being a schedule, and that they are ‘behind’ it. Others, in a similar manner to the extract above, mentioned the difficulty of the language, and specifically that it was much more difficult than they had expected:

*Probably a bit demoted, not because of the course but because I find Irish so difficult. - Learner E*

*It has taught me to better understand the language but that I will never be able to be fluent simply because I do not speak it daily – Learner F*

This realisation, that learning a language is quite a long-term, sustained, occasionally-difficult task, appears to come following some interaction with course materials, and suggests that despite the potentially large benefits of approaching such learning as a challenge, the reverse may also be the case. Where such pressures are present, it is possible that even highly-motivated learners will fail to continue as they find themselves simply unable to continue at this structured pace in an informal learning context, or choose to give up.

### *Implications of unified results*

Results such as these present some food for thought for learning designers, particularly when they are contextualised within the wider field of MOOC research with regards to completions and participation rates. This particularly includes the supplemental information, which may be key in unveiling the challenges learners face in a clear and actionable way. While much general MOOC research has focused on the phenomenon of drop-out and providing explanations for course completion/failure to complete, understanding flux in continuation is also important when offering a series or suite of courses and what prior knowledge or experience participants may have at each point of a series. The general pattern of these results suggests a tension is inherent in building a series of courses which are open to all, on the one hand, and seeking to gradually increase in difficulty or build upon results over time on the other. Anywhere between 20-30% of MOOC participants on

each course from the second onwards were new learners, even on courses well into the series. While it is likely impossible to structure a series which cater for continuing learners *and* for new learners at each point, the importance of frequent pathways and reminders of when prior courses will be run once more may be key. This is as the worst possible outcome would be for learners to engage in participation on a MOOC which might be too difficult for their current level of experience, and this demotivates their further participation with the subject matter, when a ready alternative would be to commence from the beginning once this course rolls round once more.

It also speaks to the broader difficulties that may exist with regards to learning design, in that the diffuse goals and motivations learners have to partake in a MOOC may be themselves in tension or difficult to structure in a way which can please and satisfy a broad range of desires. A course can provide many pathways, yet the ultimate structure of a course is more or less concretely-set, due to factors as diverse as securing formal accreditation and even platform structure. The solution, if such can be said to exist, may be to encourage and promote these diverse forms of participation and goals, in addition to perhaps making explicit, indeed even embracing, the subjective elements of defining success and participation (Henderikx et al, 2017). Balancing these concerns may not be easy, but the promise of MOOCs, namely large-scale learning, suggests in must be considered.

#### *Further research and conclusions*

Importantly, given the rather specific nature of the MOOCs that we have studied, it would be important to run similar surveys in other types of staggered MOOC series to see if the pattern is the same across discipline and subject-matter. This course in an LMOOC on which a popular and well-renowned culture is taught, it may be that many were attracted to this, rather than the MOOCs as specific language courses. As a consequence, the novelty of the courses may outweigh the barriers to participation in a way that a course on advanced trigonometry (for example) may not. Furthermore, given that the numbering of the courses is potentially-confusing, it may be possible some respondents were unaware it was part of series as they commenced.

An additional limitation is though the response rate was double digit, learners who responded to the survey may be atypical of the learners on the MOOC itself, with limited means to distinguish this latter grouping. These caveats prevent a broader generalisation, but point to a burgeoning potential research field, that may be of increasing importance as research into MOOC participation matures and advances.

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