



Implementing, adapting, and evaluating an open online course to safely foster global understanding of suicide

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ABSTRACT HEAD

Public awareness is crucial for suicide risk reduction. In March 2019, an international Massive Open Online Course (MOOC) was launched educating on global suicide and prevention. The resource transitioned from discussion facilitated runs to an open-access, non-interactive format. A quasi-experimental approach explored the efficacy of design iterations to educate about suicide. Eight implementation criteria (acceptability, adoption, appropriateness, cost, feasibility, fidelity, penetration, sustainability) were addressed using student surveys, facilitator feedback and routinely collected host platform meta-data.

Between launch and February 2025, 9,620 students enrolled, with >95% (n= 904) course satisfaction. All implementation criteria were met. While initial comment-enabled runs were safely managed, the evaluation shows that safe, asynchronous learning can be achieved by optimising content and disabling discussion forums.

The MOOC was highly implementable, demonstrating value in open international resources. Offering the course as independent study, did not negatively impact student experience and reduced facilitator workload and anxiety.

Keywords: suicide prevention, online learning, sensitive topics, student safety, MOOC

Introduction

The World Health Organization (WHO, 2024) estimates that approximately 720,000 people die by suicide each year, with higher numbers of people experiencing suicidal ideation or self-injury. Suicide prevention efforts continue to evolve on both individual and national levels (Chan, 2024). Increasing general awareness of suicide risk and prevention has been demonstrated to be an effective approach to promote suicide prevention (Hoven et al., 2009; Niederkrotenthaler et al., 2014). Online self-directed learning of suicide prevention is under-researched but has potential to effectively contribute to these efforts.

Suicide literacy addresses 'terms of the nature, risk factors, signs and treatment of suicide' (Žilinskas & Lesinskienė, 2023). The need for suicide literacy has been recognised as vital for the general population (Schwartz-Lifshitz et al., 2012). However, high-quality, wide-reaching teaching programmes to deliver suicide prevention training are limited. Equally suicide prevention training is commonly delivered in-person, which can create barriers for some and may be unsuitable for delivery on an international scale. The value of online suicide awareness training was outlined by Scott and colleagues (2016). Although in-person and

web-based suicide prevention training were both associated with statistically increased awareness and comprehension, Scott and colleagues (2016) found knowledge acquisition was significantly greater for those learning online. As such, online courses may be the superior mode to deliver large-scale suicide awareness training.

Schomerus and colleagues (2015) observed that perceived and enacted social stigma, as well as self-stigma, can contribute to poorer mental health outcomes. It is recognised that suicide education addresses stigma, increases internal willingness to seek support in people experiencing suicide ideation, and progresses understanding in peers to support people to engage in help-seeking behaviours (Grosselli et al., 2024).

The WHO (2023) provides guidance for media professionals covering suicide-related content, advocating for sensitive reporting to optimise the safety of consumers and reporters. Such guidance is required as exposure to suicide-related content can negatively impact mental health and increase the risk of suicide (Witczak-Błoszyk et al., 2022). The importance of a considered approach is necessary as people may be impacted by personal experience. This is reiterated by Neil and colleagues (2024) in relation to teaching emotive topics to medical students. However, there is a dearth of information related to safeguarding measures when suicide is discussed in the context of teaching, staff training, or raising suicide awareness.

Massive Online Open Courses (MOOCs) provide inclusive, internationally accessible, internet-based learning opportunities (Conole, 2015). Although the overall impact of health-related MOOCs is difficult to measure, public health experts agree that the “effectiveness of MOOCs is unquestionable... with almost universal reach and access” (Bettiol et al., 2022). Afsharnejad and colleagues (2023) evaluated the efficacy of ‘Talk to Me’, a self-help suicide prevention MOOC for Australian university students launched in 2020. Using pre/post measures, engagement with the MOOC was associated with increased knowledge of mental health and greater likelihood to engage in help-seeking for mental health concerns. However, the MOOC was not evaluated to identify how implementable the course would be on an international scale.

Proctor and colleagues’ (2011) conceptual framework provides a structured approach for evaluating the success of the launch of educational resources, such as Preston and colleagues (2021). The criteria (definitions outlined in the methods section) target acceptability, adoption, appropriateness, costs, feasibility, fidelity, penetration, and sustainability. Since its publication, Proctor’s eight criteria for evaluating implementation have been heavily adopted in health-related evaluations (Proctor et al., 2011). Indeed, a ten-year systematic review identified that Proctor’s framework was implemented in 400 peer reviewed (Proctor et al., 2023) studies to evaluate evidence-based innovations. Although the format of these interventions (e.g. online, in-person) was not explored, 22% focused on behavioural health and a further 45% focused on healthcare.

A range of literature related to providing effective training around suicide prevention targets healthcare professionals. Although this literature called for the uptake of sensitive language, learner safety was not routinely considered and evaluated when implementing suicide prevention training (Chuop et al., 2021; Ferguson et al., 2020; Lyra et al., 2021). Neil and colleagues (2024) explored the experiences of lecturers teaching medical students about domestic violence and noted an observed overlap with their teaching of other sensitive topics, including suicide. Considerations included that the students could have personal experiences related to the issue being presented, meaning that lecturers had a duty of care to keep their learners emotionally safe and sensitively manage any student disclosures.

When exploring the literature, little can be sourced about approaches taken to safeguard suicide prevention trainers and trainees from negative mental health impacts. There is evidence that work-related suicide exposure has a negative impact on wellbeing (Lyra et al., 2021) and can be linked to increased suicidality (Witczak-Błoszyk et al., 2022). WHO (2023) guidance on media reporting on the topic of suicide emphasises that those responsible for delivering media are also at risk of being impacted by the stories they are reporting on. It is advocated that support services be signposted for, and accessed as required by, media consumers and reporters. It is anticipated that the recommendation for availability of mentoring and debriefing opportunities for reporters, would also be applicable for individuals facilitating suicide prevention training.

Study aims

This study aims to evaluate the implementation and safety of a three-week MOOC exploring global perspectives of suicide risk, and prevention. The project aims to address the following questions:

- Can a MOOC discussing global perspectives of suicide and suicide prevention be implemented within a global context?
- What is the optimal way to implement a MOOC discussing global perspectives of suicide and suicide prevention?

Method

A novel multi-modal MOOC teaching resource on the topic of suicide and suicide prevention was designed and delivered via the FutureLearn Platform (Sharp et al., 2020). A multi-disciplinary team of psychologists, psychiatrists, suicide researchers, people with lived experience, and digital technologists collaboratively and iteratively developed the educational materials. The three-week course was publicly accessible to any internet-enabled and connected device, students were required to be over 16 years old and to create an account on the platform. Following the initial launch of the course, the MOOC was relaunched an additional three times, equating to four 'Runs' in total.

The course was free to students across all Runs unless they elected to have prolonged course access and a certificate of course completion (£53-£79) or to subscribe to annual access to a range of courses (£179.99-£249.99). During Runs 1-3, prospective students only had the option to sign-up to the course within a specified three-week period. An updated approach was implemented in the final Run launch meaning the course is now continually accessible for sign-up. With 'free-to-access' contracts, students have three-weeks from the point of sign-up to engage with the learning materials. The materials are unlocked and available to the students one week at a time.

The course curriculum is outlined by Sharp and colleagues (2020) however in brief, the weekly learning content included evidence-based written materials, videos, self-care activities, quiz questions, and content addressing an aspect of suicide risk with a specific focus on a geographic area as well as content focused on suicide prevention at a local and global level. The overall course aims have been consistent, however, a number of course content amendments and updates have been implemented in the various iterations (see Table 1).

Table 1 Timeline of Suicide Prevention MOOC Runs

Run	Sign-On Period	Comment - enabled Run*	Dates**	Amendments
1	3-weeks	Yes	4 March 2019 – 7 th April 2019	Not applicable
2	3-weeks	Yes	9 Sept 2019 13 Oct 2019	Pre-launch: New content about appropriate and sensitive language when discussing suicide
3	3-weeks	No	2 Nov 2020 - 6 Dec 2020	All student comments were disabled RCGP 'accreditation' changed to 'endorsement'
4	Open	No	3 May 2021 - ongoing	Run Launch: COVID-19 impact content added August 2024: Global prevalence of suicide death updated Focus changed from suicide risk during COVID-19 to suicide risk during global crises Inclusion of suicide deaths initiating legal change Review of global statistics based on WHO data Within-text, embedded hyperlinks to research papers, online resources, and peripheral reading updated

* Comment-enabled: Students were able to participate in comments threads during the three-weeks following the course launch date.

* Run: a timeframe where the Suicide Awareness MOOC was available for students.

** The sign on dates were the 3 weeks from when the 3-week run was launched. For Runs 1-3, student data reflects all individuals enrolled by the end of week 4.

Internal university funding was secured to support course creation and launch. Initial outlays were for a videographer, animator, location hire, gift cards for people with lived experience filming contributors, and Royal College of General Practitioners (RCGP) accreditation. The course was primarily developed internally by staff, requiring no additional funding for content creation. Prior to launch, feedback regarding the course content and the plans for staff engagement was gathered from suicide prevention stakeholders (e.g. senior practicing healthcare professionals, University academics, legal professionals, third sector mental health organisations and the Mental Welfare Commission), and an iterative process of improvement undertaken to ensure all stakeholders were satisfied.

Ethical approval was provided by the MVLS College Ethics Committee as part of the project 'Fuelling the flame: Cultivating an environment of Scholarship of Teaching and Learning (SoTL) in the School of Health and Wellbeing (SHW)' (Project No: 200240024).

Proctor and colleagues' (2011) eight criteria provided a structured framework to evaluate the MOOC. Details of the benchmarks engaged to determine effective execution of each of the criteria are outlined in Table 2. Where evidence is available for benchmarking the literature has been cited. Where no evidence-based benchmark data were identified, the authors applied 50% as a cut-off to indicate criteria attainment. Due to commercial sensitivity, we were unable to access an objective measure to determine standard costings or income generated for open online courses, therefore the authors referred to other similar courses that they created on the same platform.

Table 2 Definitions for Proctor and colleague's (2011) criteria and benchmarking considerations engaged to determine fulfilment of these in the current study

Criteria	Definition	Benchmark(s)
Acceptability	"the perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory"	Participants' reporting satisfaction with the experience $\geq 90\%$, the platforms' average course customer satisfaction (Futurelearn, 2022b). Target question "the course met or exceeded my expectations".
		Participants' qualitative evaluation of the learning content primarily positive.
		Participant course completion rate $\geq 20\%$, the average rate of course completion on the platform report by the CEO (Murray, 2019). The platform deems certificates of completion to be merited when students have undertaken more than 90% of steps (Futurelearn, 2025a).
Adoption	"the intention, initial decision, or action to try or employ an innovation or evidence-based practice. Adoption also may be referred to as 'uptake'"	The intention to impart evidence-based information would be achieved, the majority ($\geq 50\%$) of students reporting gaining new knowledge or skill (author determined cut-off).
		To represent effective actioning of evidence-based practice, the majority ($\geq 50\%$) of students reporting application of new learning by the end of the course (author determined cut-off).
Appropriateness	"the perceived fit, relevance, or compatibility of the innovation or evidence-based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem"	Accreditation and/or endorsement of course granted by an external organisation associated with the mental health field.

Cost	“the cost impact of an implementation effort, [which depends on] the costs of the particular intervention, the implementation strategy used, and the location of service delivery”	Determine if the launch cost of the course reflects costs for courses of similar duration and topic.
		Determine if income generated through the platform balances the original launch costs.
Feasibility	“the extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting....”	Effective risk-assessment and safeguarding management demonstrated by staff actioning of safety protocol (moderation and emergency suicide-risk intervention) in a timely manner, in accordance with the UK Online Safety Act 2023 (UK Government, 2023). In line with the related components of Emanuel et al. (2009) guidance on achieving safety “the minimisation of the incidence and impact of... adverse events.”
Fidelity	“the degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers....”	The MOOC aimed to provide accessible educational content to raise awareness of mental health issues and self-harm and to explore the challenges of suicide prevention in the global setting (Sharp et al., 2020). The additional aim of establishing international reach is explored within the ‘penetration’ criteria.
		Establish a variation in types of learners engaging with the course. E.g. lay people or professional development focus, as Sharp et al. (2020) aimed for this to be utilised by “healthcare professionals, (medical and allied health professionals) and anyone interested in health research” (Sharp et al., 2020).
Penetration	“the integration of a practice within a service setting and its subsystems”	As cited in Sharp et al (2020) a key aim was to achieve global reach of the resource (Sharp et al., 2020).
		Establish if course participants reported sharing their learning with others.
Sustainability	“the extent to which a newly implemented treatment is maintained or institutionalized within a service setting’s ongoing, stable operations”	Establish if it is possible for the course to be maintained as an ongoing open resource for learners, within the team’s organisational roles.
		Establish if permanently accessible asynchronous learning on the topic of suicide prevention can be delivered cost-effectively.

The second component of the study aimed to determine if learner experience can be optimised, and safeguarding achieved when teaching on the sensitive topic of suicide. The importance of protecting learner and staff safety was prioritised and enacted by embedding self-care activities within the learning materials, signposting wellbeing resources, and the inclusion of a code of conduct providing guidelines around the discussion of suicide. WHO guidelines on safe and responsible reporting of suicides were adhered to (WHO, 2008; 2017). Emanuel et al. (2009) definition of safety was originally refined to target patients, but their focus on improvement methodologies to reduce risk and support individuals to overcome adversity, led the authors to conclude it was an appropriate definition to adopt for ensuring the wellbeing of those impacted by the topic of suicide, and is explored in relation to Proctor and colleagues' (2011) 'feasibility' criteria (16).

For Runs 1 and 2, 54 online-discussion forums were embedded in the course materials providing opportunities for commenting and discussion. The option to contribute comments was terminated by the platform three-weeks after the Run launch date. Students who enrolled during the Run were able to complete their three weeks of learning and engage with historic comments.

A key difference between the Runs was that unlike in Runs 1 and 2, the commenting function for student discussions was disabled in Runs 3 and 4. Run 3 was a pilot to establish if the removal of the comment function impacted on student satisfaction. Student safeguarding is considered as a component of feasibility when exploring Proctor and colleagues' (2011) framework, and further consideration is given to the impact of the decision to disable comments on staff and student experiences of the course.

As this was an evaluation of an intervention, ethical approval was not required. Students are advised during the sign-up process they are consenting to anonymous data related to their engagement with the learning resources being automatically collected by the platform (Futurelearn, 2025b).

Data Collection

Although Run 4 is ongoing, for the purposes of this evaluation, data was collected up to the 4th of February 2025. Data collected included student enrolment, engagement with teaching materials, course progress, learning habits, and direct qualitative evaluation feedback from students. These datasets are available to download separately in anonymised files by the MOOC development team. Qualitative student feedback was screened and deidentified by FutureLearn prior to being shared with the course team. The course facilitators also provided written feedback of their experiences.

Data Analysis

Quantitative data were reported using frequencies and percentages, providing overall summaries and split between comment-enabled and -disabled Runs. Where appropriate, Pearson chi-square tests were used to test for statistical differences between comment enabled and comment-disabled runs. Qualitative data (anonymous student feedback and course moderator feedback) was analysed using thematic analysis (NVivo Sentiments).

Results

Student cohort composition

Across Runs 1 to 4, 6,402 students enrolled on this course. Students were invited to share their demographic information (gender, country, age range, highest education level, employment status,

employment area), however, as is the norm for courses hosted on this platform, the majority opted not to answer these questions. Therefore, summary demographic information is not presented.

Implementation in a global context

Table 3 provides an overview of the benchmarking outcomes organised using Proctor and colleague's (2011) implementation criteria.

Table 3 Application of benchmarks related to Proctor and colleagues' (2011) criteria with associated conclusions

Criteria	Application of Benchmarks	Benchmarking Conclusion
Acceptability	Of all the students since the course launch who completed the end of course survey (n= 904), over 95% of students reported that the course met or exceeded their expectations.	Achieved - 95% student satisfaction, higher than platform average.
	Review of the qualitative feedback determined that the leading themes of the post-course qualitative feedback from the students was that the course content was engaging, interactive, and interesting.	Achieved – Notably positive qualitative feedback relating to learning content.
	Platform meta-data indicated that 25.3% of students completed at least 90% of the course.	Achieved - Although data were unavailable for the number of students to complete the course, our data indicates that over a quarter of all students completed at least 90% of the course, thereby likely to have surpassed the 20% of students reported in Murray (2019) course.
Adoption	Almost all (97.2%) students reported gaining new knowledge or skills.	Achieved – Intention to impart evidence-based information.
	More than half (56.0%) of the participants reported they had applied their new learning.	Achieved – Actioning of evidence-based practice.
Appropriateness	Accreditation was sought from the Royal College of General Practitioners (RCGP), Royal College of Physicians and Surgeons of Glasgow (RCPSG), and the Royal College of Psychiatrists (RCP). No response was received from the RCP. Runs 1 and 2 were accredited by the Royal College of General Practitioners (RCGP) but was financially unsustainable. The RCPSG and several mental health organisations or expert groups also endorsed the four runs of the course (including Breathing Space, Samaritans, the British Psychological Society, and the Suicide Behavioural Research Laboratory).	Achieved – Endorsement was awarded by five organisations, for Runs 1 & 2 accreditation by one organisation was in place.
Cost	Other MOOCs offered by our team received development funding from the platform, which equate to the cost of launching this course. The UoG facilitator costs for the comments-enabled Runs were unavoidable to ensure student safety, and are not representative of other MOOCs, therefore a decision was made to omit them from consideration in relation to Proctor and colleagues' criteria, instead considering them directly in relation to safety (see Table 5).	Achieved – The MOOC launch costs reflect costings for other MOOCs.

	The income generated to date (£5,947) has surpassed the initial 2019 investment (£4,924) for course development and launch.	Achieved – The original cost of launching the MOOC has been balanced through the payments for certificates by participants.
Feasibility	Across the four Runs, no risk-to-life incidents occurred requiring escalation of emergency suicide-risk intervention. Throughout Runs 1 and 2, 54 live discussion comment threads required moderation. Over 3,000 students engaged with the MOOC during the comment-enabled Runs (1&2), with 4,410 discussion comments made. Sixty-nine comments (1.6%) were hidden due to inappropriate content, over half of these were references to self-harm or suicide methods (n=33) or spam (n=8).	Achieved – Course resources and safeguarding protocol demonstrated to be feasible for use in the online environment, aligning to Emanuel et al. (2009) safety achievement guidance “the minimisation of the incidence and impact of... adverse events.”
Fidelity	The MOOC resources were reviewed stakeholders with expertise in the field, including people with lived experience and signed off for being accessible, educating about mental health and self-harm, and exploring global challenges in suicide prevention.	Achieved – Stakeholders deemed the aims of the education package to have been effectively addressed.
	A wide variety of students engaged in the course, ranging from lay people to healthcare experts and suicide prevention specialists, indicating the courses’ suitability to a range of audiences.	Achieved – Diverse range of students identified.
Penetration	Student feedback (n= 904 students) indicated that 74.0% of students had shared their new knowledge from the course, thereby illustrating subsystem penetration.	Achieved – integration through sharing of learning.
	Across the four Runs, students from 159 countries enrolled onto the course. MOOC metadata indicated that the course had engagement from residents of all inhabited continents across the runs, thereby indicating global reach. Half (50.4%) were resident in the UK, followed by Australia (4.4%), the United States (3.6%), India (3.5%), and Canada (2.5%).	Achieved – Global reach evidenced.
Sustainability	Qualitative feedback from course facilitators indicated that the time and emotional investment required to review new student comments was unsustainable (see ‘Safeguarding and Learner Experience’ section below for details). The continued relevance of the data presented in the course was dependent on future societal changes, but was forecast to remain highly relevant for at least seven years.	Achieved – the course presentation has evolved over the four Runs and the course team consider the current approach to be sustainable in their organisational roles.
	No additional costs have been incurred for content creation since the course launch. Within contracted hours, members of the author team have maintained course content. An additional 35 hours were invested in 2024 to review and update the learning materials, and it is anticipated that future reviews be undertaken on similar 5-year timescales. Current income equates to around £140 per annum. Reduced income is expected, as the UoG MOOC co-ordinator advised: <i>“In general, MOOCs tend to bring in the greatest amount of revenue in</i>	Achieved – The long-term costs of keeping the course as an open resource are minimal, and maintenance can be undertaken by the authors within their academic roles.

	<i>their first 18months to 2 years. After this point there is a plateau, then decline as the course has been in circulation for some time”.</i>	
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Safeguarding and learner experience

Across all runs, a section on wellbeing was included in week one, comprising a range of accessible support options. Each online page across the course included a link directly to these resources. The wellbeing section highlighted that the course was an educational resource rather than a therapeutic tool and encouraged participants to seek help as required. “If you’re feeling distressed, in a state of despair or suicidal, it’s important to tell someone. We do not provide a treatment service or advice for those in crisis. We urge you to seek help from your doctor, a key worker, or family and friends. You can also contact helpline services where there are people you can talk to in confidence and, if you prefer, without revealing your identity.”

The approaches to safeguarding evolved across the four Runs and the reasoning for these amendments are outlined in Table 4.

Table 4 Staff and student safeguarding changelog

Pre Launch	Failed efforts to negotiate optimal discussion format and resulting concessions As outlined within Proctor and colleagues’ (2011) feasibility criteria, involvement of a range of informed stakeholders ensured that safety requirements were carefully considered for the development and delivery of this online learning resource. Prior to the Run 1 launch the course team requested that the host platform remove the automatic hosting of 54 asynchronous discussion comment threads. Removal of comment threads was not an option, nor was a reduction in the number of discussion threads. Three concessions were negotiated: • Comment threads were closed to new posts at the end of the three-week sign-on period • Platform moderators would remove posts flagged by the course facilitators • A contingency plan was established to escalate any posts that indicated potential ‘risk-to-life’ ensuring that the platform could arrange emergency services for a student, should it be necessary.
Runs 1 & 2	Comment monitoring team To further address safeguarding, a team of course facilitators with expertise in suicide research and/or wellbeing support were employed to facilitate discussion and optimise learner safety by reviewing the comment threads twice daily. The running of comment-enabled Runs was contingent on availability of finances. Development of facilitation guidance Monitoring was completed to meet pre-stipulated requirements and prioritised checking for any possible learner wellbeing vulnerabilities, ensuring any references to suicide methods were removed, and facilitating the use of appropriate language related to the sensitive course topic. Facilitator interventions included signposting learners to wellbeing resources, requesting that learners edit any comments deemed not to align to the code of conduct, and ‘flagging’ comments that needed hidden by platform moderators. The course leads (LS & JLM) also reviewed all comments daily and provided support to the facilitator team.

	If a participant shared a vulnerability, the moderator would reply thanking them for their contribution and replicating the wording associated with the wellbeing resources. This reiterated that they should prioritise their own wellbeing throughout the course, suggested they take time away from the course if helpful, and directed them to the wellbeing support resources. This was partly to prevent other participants offering the person guidance. Management of flagged comments and engagement with platform moderators Details of flagged comments across Runs 1 and 2 are reported under the 'feasibility' criteria in Table 3. In summary, 1.6% of 4,410 comments were flagged by the UoG facilitators and there were no requirements to escalate emergency arrangement for 'risk-to-life'. The course leads communicated consistently with the platform moderators to minimise risk related to the online interactions. The UoG facilitators adhered to the pre-stipulated protocol but were dependent on platform moderators to remove flagged comments. In practice, protocol adherence by the platform moderators was inconsistent.
Run 2	New content created targeting sensitive language For Run2, a new section of material was incorporated that further explored the importance of sensitive language when discussing suicide and emphasised the importance of considerate engagements within the discussion forums. This provided specific guidance that facilitators could direct students to if there were concerns about the communication style or flagging a post.
Run 3	Facilitator team determined comment-enabled approach unsustainable On completion of Run 2, feedback from the facilitator team indicated the management of online forums was unsustainable. <i>"I found myself having concerns for the wellbeing of the students between my twice-daily checks. As the nature of the subject we are overseeing is one of high sensitivity and has an increased chance of evoking a psychological response from students, this course cannot be treated by the platform in the same way as other courses."</i> Concerns about inappropriate comments, the lack of autonomy with removing comments, and persistent 24-hour contact with colleagues to discuss and resolve concerns were having a negative impact on facilitator stress levels, resulting in increased anxiety. Contractually the team were obligated to offer the course again on the platform, the MOOC leads highlighted that this was not feasible without amendments to the interactions necessary and alternative arrangements were put in place for Run 3 to try and mitigate the issues. Pilot Run with comments-disabled As a pilot, Run 3 was offered and open for the same duration as the initial runs with all commenting opportunities removed. Given that the team were not offering any new information relating to wellbeing within the comments, they did not consider any additional safeguards to be necessary when disabling the comments. An additional section was included to explain the reasons for this presentation style. Reflecting on this shift to offer the learning materials without active discussion, one moderator commented: <i>"It has been a relief knowing that the valuable course content is available globally but without a daily frantic check to ensure no potentially provocative or distressing comments have appeared overnight."</i> This comment reflects the removal of a burden and responsibility reported by all the UoG facilitators and led to the team concluding it was feasible for the course to run again in future provided the comments were deactivated. This decision delighted the team, with the knowledge that they would continue to provide access to high-quality, considered materials around the topic of suicide prevention for free to a global audience.
Run 4	Current comments-disabled approach

	Prior to Run 4 arrangements were made for the course to be offered on an open basis to optimise flexibility for learners rather than restraining their engagement to pre-determined three-week periods.
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The costs for UoG team facilitation for Runs 1 and 2 were unavoidable to ensure student and staff safety around the requirements of the host platform. These costs were eliminated since the commencement of Run 3 as the ongoing availability of the materials for learner engagement does not require UoG facilitation.

The removal of the comments threads eliminated the risk of students being exposed to insensitive language or potentially distressing comments whilst engaging with the MOOC materials. The evidence establishes that the presence of absence or a commenting function in a MOOC does not impact on students' satisfaction or engagement with course content when discussing suicide and suicide prevention (Table 5). The qualitative feedback from the post-course survey was processed using Nvivo28 to analyse sentiments, the course was deemed to be engaging, interactive, and interesting, these were highlighted more frequently in the comment-enabled Runs than the comment-disabled Runs. Student feedback across runs was positive: "Excellent course provided in a sensitive and supportive way" (MOOC student); "I loved this course and fully understood why the comments had been turned off. I want to thank all of those who contributed to this course. Well done!" (MOOC student).

Table 5 Differences between runs

Item	Measure	Runs		Chi sq. sig.
		Comments Enabled	Comments disabled	
Students enrolled (N)	Platform meta-data	3693	5927	NA
Course costs incurred (£)		7150	0	
Completed at least 90% of the course (%)	Platform meta-data	22.9	26.9	NA
Student satisfaction (N, %):	Did this course meet your expectations (Likert responses): Answered better/ met expectations	92.6%	96.6%	<0.001
Student qualitative feedback	'Anything else?' (most common student sentiments of the course)	Engaging Interactive Interesting	World class curriculum Positive learning experience Detailed information	NA
Videos viewed in full (on average, %)	Platform meta-data	73.1	53.8	NA•

Gained new knowledge or skill	Since starting the course, have you gained new knowledge or skill? (% yes)	95.8	97.8	<0.001
Applied new learning	Since starting the course, have you applied what you learned? (% yes)	49.2%	59.1	<0.001
Shared new learning	Since starting the course, have you shared what you learned? (% yes)	76.4	73.3	<0.001
Number of countries students indicated to be based in (N)	Platform meta-data	135	141	NA

N= number, % percentage. •test of difference could not be conducted due to differences between runs

Meta-data indicated that on average, more students viewed videos to completion during comment-enabled Runs than comment-disabled Runs. However, this trend varied between geographic regions. Specifically, students in Europe and Africa were more likely to watch videos to completion if course comments were enabled, whereas the opposite was true for students in Asia. Based on the availability of comments, differences in video engagement were less distinct for students in Oceania or the Americas.

Students who undertook comment-disabled runs, were more likely to report that they applied their new learning during the period of the course (59.1%), than those with comments enabled (49.2%). No further differences were observed in skill development, application, or sharing of knowledge between Runs.

Discussion

The achievement of all eight of Proctor and colleagues' (2011) implementation criteria demonstrates that an educational programme providing perspectives on suicide and suicide prevention can be effectively delivered globally. This knowledge has been delivered effectively through an online, asynchronous MOOC where size and needs of the student cohort was a consideration in the teaching (Sharp et al., 2020). (1) Acceptability was evidenced by satisfaction with the course, positive qualitative feedback and course completion rates, (2) adoption through measures of new learning and skill application, and (3) appropriateness was established by the range of organisations endorsing the resource. The (4) cost criteria has been achieved as the balance of income from the MOOC has covered the initial outlay to launch the course. Although the ongoing income is minimal, as is expected when a MOOC has been available for a long period, the University of Glasgow commits to being world changing and values social responsibility and community engagement. Supporting their employees to deliver and maintain a globally accessible online learning resource to promote suicide prevention aligns well to these commitments. In terms of (5) feasibility, challenges with comment-enabled runs have been resolved and arrangements put in place to optimise feasibility. (6) Fidelity is marked by the appropriateness of the educational information being delivered and accessibility to students with varying learning backgrounds, (7) penetration by students being

international and reporting their sharing of knowledge from the course, and (8) sustainability by ensuring that the course can continue to be offered with minimal organisational or staff burden.

It was apparent from the evaluation that the practices targeting learner safety in place for comment-enabled runs were effective, however the responsibility placed on facilitators, and the resulting anxiety and costs meant this model was unsustainable. Although there was an initial cost incurred to safely facilitate online discussions, the shift to offer a permanently open comment-disabled service has removed ongoing costs. Opportunities for interaction during MOOCs can support learner understanding and application, however Conole (2015) highlights that peer engagement can also be achieved through participants pursuing independent and social media discussion. As safe facilitation was not deemed feasible, the team determined that offering open access to the MOOC resources was the most beneficial iteration this course could provide in global efforts to prevent suicide. The evidence collated demonstrates that safe and effective online learning can be effectively delivered asynchronously by actively optimising the content of the learning materials and disabling student discussion forums.

Although the COVID pandemic occurred within the reported period of the MOOC delivery, the authors do not consider this to have a bearing on the generalisability of the observations. MOOCs have been a popular learning environment globally prior to 2012 (Conole, 2015).

Several limitations exist with the reported study and the resources available to extract data from, hindering a comprehensive evaluation of the course's impact. The available demographic data about students was insufficient. FutureLearn (2019) reports that most (>60%) students undertaking MOOCs are female (Futurelearn, 2022a). If it were possible to determine if our suicide prevention course adheres to the trend of low male engagement, this could prove to be a missed opportunity to effect change as men are at least twice as likely to die by suicide (WHO, 2024).

To help students recognise and reflect on their learning, they were invited to complete between two and four quizzes each week with up to five questions included in each. Quiz success outcome could have been helpful to indicate levels of participant understanding with the comments activated and de-activated, however the platform did not allow access to quiz scores for analysis.

Low engagement in the post-course survey increases the risk of bias. For example, although the outcomes indicate the course had resulted in penetration this is concluded using only a small proportion of the enrolled students. Students expressed satisfaction and learning, however, a competency assessment comparing pre- and post-course knowledge would have increased the rigour of these claims. In addition, it was not possible to compare student demographics or post-course feedback with other courses hosted on the platform due to a lack of aggregated data. Additionally, it was not feasible within the context of this study to identify the impact, if any, it had in the reduction of suicide outcomes.

Although course completion was explored the reasons for students opting not to complete or unenrolling are not reportable. Students had the option to unenroll from the course, however those who selected this option rarely provided feedback into the reasoning behind their decision. The questionnaire response options have evolved over the four course Runs, meaning that available data were inconsistent.

Moving forward, the team anticipates reviewing the learning content thoroughly in approximate 5-year intervals but will be responsive to any major changes in the field prior to this as necessary. This approach

was effective in developing new content relating to the COVID pandemic. During these reviews available global and MOOC data will be considered to inform future developments.

Successful global implementation of the course, and its appropriateness for lay people and suicide prevention experts alike, is testament to its creation being iterative, co-developed, and co-designed. Engaging suicide prevention expert stakeholders, including individuals with lived experience, to inform, review, direct, and sign-off the pedagogy provided strong foundations for a robust and accessible learning resource. Prioritising respectful language use, learner safety, and wellbeing throughout the creation process has resulted in this free-to-access resource being effectively offered asynchronously, sustainably, and safely. The team believes that providing globally open access comment-disabled online learning resources on sensitive topics is the optimal safe and sustainable approach to effectively allow people to engage across all time zones.

Biographies

Laura Sharp is a senior lecturer in the School of Health and Wellbeing. She has contributed to a wide range of health and wellbeing studies. She has a keen interest in equality, diversion, and inclusion, and has extensive experience of teaching scholarship targeting student learning opportunities.

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Heather McClelland is a lecturer on the Clinical Psychology programme and actively researches interpersonal factors associated with negative mental health outcomes, particularly loneliness and suicide.

References

- Afsharnejad, B., Milbourn, B., Brown, C., Clifford, R., Foley, K. R., Logan, A., Lund, S., Machingura, T., McAuliffe, T., & Mozolic-Staunton, B. (2023). Understanding the utility of "Talk-to-Me" an online suicide prevention program for Australian university students. *Suicide and Life-Threatening Behavior*, 53(5), 725-738. <https://doi.org/10.1111/sltb.12978>
- Bettio, S., Psereckis, R., & MacIntyre, K. (2022). A perspective of massive open online courses (MOOCs) and public health. *Frontiers in Public Health*, 10, 1058383. <https://doi.org/10.3389/fpubh.2022.1058383>
- Chan, L. F. (2024). Cultures, contexts, and learning opportunities in suicide prevention. *The Lancet Public Health*, 9(10), e716-e717. [https://doi.org/10.1016/S2468-2667\(24\)00216-0](https://doi.org/10.1016/S2468-2667(24)00216-0)
- Chuop, M., Michel, Z., Shah, R., Chen, J. I., & Black, W. (2021). From screening to interventions: teaching clinical suicide prevention skills to medical students. *Academic Psychiatry*, 45, 292-296. <https://doi.org/10.1007/s40596-020-01248-3>
- Conole, G. (2015). Designing effective MOOCs. *Educational Media International*, 52(4), 239-252. <https://doi.org/10.1080/09523987.2015.1125989>
- Emanuel, L., Berwick, D., Conway, J., Combes, J., Hatlie, M., Leape, L., Reason, J., Schyve, P., Vincent, C., & Walton, M. (2009). What exactly is patient safety? *Journal of Medical Regulation*, 95(1), 13-24. <https://doi.org/10.30770/2572-1852-95.1.13>
- Ferguson, M., Reis, J., Rabbetts, L., McCracken, T., Loughhead, M., Rhodes, K., Wepa, D., & Procter, N. (2020). The impact of suicide prevention education programmes for nursing students: A systematic review. *International Journal of Mental Health Nursing*, 29(5), 756-771. <https://doi.org/10.1111/inm.12753>

Futurelearn. (2022a). *The Future of Learning Report 2022*.

<https://cdn-wordpress-info.futurelearn.com/info/wp-content/uploads/The-Future-of-Learning-Report-2022.pdf>

Futurelearn. (2022b). *Upskill at scale with better learning outcomes*.

https://cdn-wordpress-info.futurelearn.com/wp-content/uploads/FutureLearnforbusiness_digital_brochure-1-6.pdf

Futurelearn. (2025a). *Certificate of Achievement*.

<https://www.futurelearn.com/proof-of-learning/certificate-of-achievement#:~:text=To%20get%20a%20Certificate%20of,a%20score%20of%20over%2070%25>

Futurelearn. (2025b). Cookie policy. <https://www.futurelearn.com/info/terms/cookie-policy>

Grosselli, L., Knappe, S., Baumgärtel, J., Lewitzka, U., & Hoyer, J. (2024). Addressing help-seeking, stigma and risk factors for suicidality in secondary schools: short-term and mid-term effects of the HEYLIFE suicide prevention program in a randomized controlled trial. *BMC public health*, 24(1), 113.

<https://doi.org/10.1186/s12889-023-17557-9>

Hoven, C. W., Wasserman, D., Wasserman, C., & Mandell, D. J. (2009). Awareness in nine countries: a public health approach to suicide prevention. *Legal medicine*, 11, S13-S17. <https://doi.org/10.1016/j.legalmed.2009.01.106>

Lyra, R. L. d., McKenzie, S. K., Every-Palmer, S., & Jenkin, G. (2021). Occupational exposure to suicide: A review of research on the experiences of mental health professionals and first responders. *PLoS one*, 16(4), e0251038.

<https://doi.org/10.1371/journal.pone.0251038>

Murray, S. (2019). MOOCs struggle to lift rock-bottom completion rates. *Financial Times*.

<https://www.ft.com/content/60e90be2-1a77-11e9-b191-175523b59d1d>

Neil, J. M., Barton, C., & Hegarty, K. (2024). Should we be concerned? A qualitative study of educators' perceptions of medical student wellbeing in domestic violence training. *Medical teacher*, 46(2), 245-251.

<https://doi.org/10.1080/0142159X.2023.2244664>

Niederkrötenhaler, T., Reidenberg, D. J., Till, B., & Gould, M. S. (2014). Increasing help-seeking and referrals for individuals at risk for suicide by decreasing stigma: the role of mass media. *American journal of preventive medicine*, 47(3), S235-S243. <https://doi.org/10.1016/j.amepre.2014.06.010>

Preston, K., Weir, N. M., Mueller, T., Newham, R., & Bennie, M. (2021). Implementation of pharmacist-led services in primary care: a mixed-methods exploration of pharmacists' perceptions of a national educational resource package. *Pharmacy Practice (Granada)*, 19(3). <https://doi.org/10.18549/PharmPract.2021.3.2440>

Proctor, E., Bunger, A., Lengnick-Hall, R., Gerke, D. R., Martin, J. K., Phillips, R. J., & Swanson, J. C. (2023). Ten years of implementation outcomes research: a scoping review. *Implementation Science*, 18(1), 31.

<https://doi.org/10.1186/s13012-023-01286-z>

Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., Griffey, R., & Hensley, M. (2011). Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda.

Administration and policy in mental health and mental health services research, 38, 65-76.

<https://doi.org/10.1007/s10488-010-0319-7>

Schomerus, G., Evans-Lacko, S., Rüsch, N., Mojtabai, R., Angermeyer, M. C., & Thornicroft, G. (2015). Collective levels of stigma and national suicide rates in 25 European countries. *Epidemiology and psychiatric sciences*, 24(2), 166-171.

<https://doi.org/10.1017/S2045796014000109>

Schwartz-Lifshitz, M., Zalsman, G., Giner, L., & Oquendo, M. A. (2012). Can we really prevent suicide? *Current psychiatry reports*, 14, 624-633. <https://doi.org/10.1007/s11920-012-0318-3>

Scott, M., Feldman, B. N., & Underwood, M. (2016). Delivering professional development in suicide prevention: A comparison of online versus in-person training. *Pedagogy in Health Promotion*, 2(4), 266-275.

<https://doi.org/10.1177/2373379916658667>

Sharp, L., Karadzhev, D., & Langan-Martin, J. (2020). Delivering the first internationally accessible Massive Online Open Course (MOOC) on suicide prevention: a case study and insights into best practice. *Journal of Perspectives in Applied Academic Practice*, 8(2), 72-80. <https://doi.org/10.14297/jpaap.v8i2.439>

UK Government. (2023). *Online Safety Act*. Retrieved from <https://bills.parliament.uk/bills/3137/publications>

Witczak-Błoszyk, K., Krysińska, K., Andriessen, K., Stańdo, J., & Czabański, A. (2022). Work-related suicide exposure, occupational burnout, and coping in emergency medical services personnel in Poland. *International journal of environmental research and public health*, 19(3), 1156. <https://doi.org/10.3390/ijerph19031156>

World Health Organization. (2023). *Preventing suicide: a resource for media professionals, update 2023*. Retrieved 10th February from <https://www.who.int/publications/i/item/9789240076846>

World Health Organization. (2024). *Suicide*.

<https://www.who.int/news-room/fact-sheets/detail/suicide#:~:text=More%20than%20720%20000%20people%20die%20due%20to>

Žilinskas, E., & Lesinskienė, S. (2023). Suicide literacy and attitudes toward psychological help-seeking: a cross-sectional study of students. *Journal of international medical research*, 51(5), 03000605231172452. <https://doi.org/10.1177/03000605231172452>

Acknowledgements

Many thanks to Dr Dimitar Karadzhov, Dr Helena Paterson, Dr Seonaid Cleare, and Dr Tiago Zortea who led on the development of steps within the original course development. Michel Syrett, Suzanne Syrett, Dr Liz England, Prof Rory O'Connor, Dr Breda Cullen, Kirsten MacLean, who supported the refinement of materials. Jenny Crow for progressing the original build and Hannah John who supported the process of updating resources. The authors also wish to thank Breathing Space, the Mental Welfare Commission, NHS Scotland, and Samaritans for their expertise when developing the course content. Endorsement support offered by the Royal College of General Practitioners (RCGP), Royal College of Physicians and Surgeons of Glasgow (RCPSG), the British Psychological Society, and the Suicide Behavioural Research Lab is also appreciated.