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Closing the Confidence Gap: Piloting an In-House Revision Programme to Improve UKMLA Preparedness, Confidence, and Question Comprehension

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Abstract

Background

The United Kingdom Medical Licensing Assessment (UKMLA) Applied Knowledge Test (AKT) is a high-stakes examination required for provisional General Medical Council (GMC) registration. Despite its importance, formal university-led revision is limited, and students rely heavily on commercial question banks. This pilot evaluated a two-session institution-based revision programme for final-year medical students.

Methods

A single centre service evaluation using pre- and post-session questionnaires was conducted at a major teaching hospital in the North West of England. All 156 final-year students were eligible. The first session was a 40-minute online session, delivered by a recent graduate, covering exam structure, AKT-style questions and revision resources. The second session was a 75 minute in-person interactive question-based session. Self-reported outcomes were assessed and pre- and post-session distributions for the first session were compared using Mann-Whitney U and Fisher's exact tests.

Results

27 pre-session and 18 post-session questionnaires were completed for session one. The proportion of students agreeing or strongly agreeing improved across all four domains: preparedness (7.4% to 33.3%), exam structure (29.6% to 83.3%), multiple choice question (MCQ) confidence (33.3% to 61.1%) and resource confidence (18.5% to 94.4%). Fifty students attended session two, and of 42 respondents, 97.6% rated it positively across enjoyment, AKT relevance and interactivity.

Conclusion

A brief, low resource, institution-led revision series may improve students' self-reported AKT preparation, warranting multi-centre evaluation.

Background

The introduction of the United Kingdom Medical Licensing Assessment (UKMLA) in 2024 represents a notable development in undergraduate medical education in the UK, establishing a common national threshold for those joining the medical workforce [1, 2]. The purpose of the UKMLA is to ensure newly qualified doctors have the core knowledge, skills and behaviours required for safe practice, regardless of the medical school form which they graduate [2]. The written component, the Applied Knowledge Test (AKT), is designed to test the application of core medical knowledge in clinically relevant scenarios [2].

For final year medical students, this creates a new high-stakes examination that requires both broad content coverage and familiarity with a specific question format.

Prior to the UKMLA, the UK lacked a standardised national assessment for medical graduates, with individual medical schools responsible for their own final examinations. This variability raised questions about the consistency of standards across institutions and the comparability of qualifications held by newly registered doctors [3]. The introduction of a unified licensing assessment aligns the UK with international models, such as the United States Medical Licensing Examination (USMLE) and the Medical Council of Canada Qualifying Examination (MCCQE), which have long served as gatekeeping assessments to ensure baseline competence [4]. The UKMLA therefore represents not only a domestic policy shift but also a step towards international harmonisation of medical graduate standards.

The AKT itself is delivered as a computer-based examination comprising single best answer questions mapped to the MLA Content Map, which outlines the clinical presentations, conditions and professional behaviours expected of a newly qualified doctor [2]. The examination draws on content across all major clinical specialties and emphasises the integration of knowledge with clinical reasoning. This breadth of coverage presents a considerable challenge for students, who must synthesise learning from multiple years of medical school into a format that prioritises applied decision-making over isolated factual recall.

Exam preparation remains a longstanding issue in medical education because assessment strongly influences learning behaviour. Students often adapt their study strategies to match the demands of high-stakes exams, and the nature of revision can therefore shape both performance and depth of learning. The concept of test-enhanced learning, often referred to as the testing effect, has been thoroughly demonstrated across educational contexts. Retrieval practice, defined as actively recalling information from memory, strengthens long-term retention more effectively than repeated study of the same material [5, 6, 7]. When combined with spaced repetition, whereby review sessions are distributed over time rather than massed together, the benefits are further amplified [8]. These principles have particular relevance to medical education, where students must retain large volumes of information over extended periods and apply it flexibly in clinical settings.

Despite the evidence base supporting active learning strategies, surveys of medical students consistently reveal a gap between recommended and actual study behaviours. Many students are largely unaware that testing is superior to restudying as a learning strategy, and that evidence-based learning strategies are not a standard part of the medical curriculum [9]. The introduction of a new high-stakes national examination may therefore serve as a catalyst for change, prompting students to reconsider their approaches and seek out resources that align with evidence-based learning principles.

The shift towards the UKMLA also raises questions about equity and access to preparation resources. Commercial question banks and preparatory courses have become commonplace in medical education, yet their cost may create disparities among students from different socioeconomic backgrounds [10]. Understanding how students prepare for the AKT, including the resources they use and the strategies

they employ, is therefore important not only for optimising learning outcomes but also for identifying potential barriers to equitable performance.

Methods

Study design

This was a single hospital educational evaluation using a pre- and post-intervention questionnaire design. The intervention was a structured online revision session for the UKMLA AKT. As the project was considered a local service evaluation, in accordance with the Health Research Authority decision tool, it did not require formal NHS Research Ethics Committee approval. All participants provided informed consent for their anonymised responses to be used for educational evaluation purposes via an explicit consent question at the start of each questionnaire.

Participants and recruitment

The study was conducted at a major teaching hospital in the North West of England that hosts final-year clinical placements for medical students from a single UK medical school. All 140 final-year medical students based at the hospital and due to sit the UKMLA AKT were eligible to participate. Students were invited to the session via an email circulated by the Year 5 university administrator and were sent two reminder emails to encourage sign up prior to the session.

Intervention

The intervention consisted of two sessions. The first was a structured online revision session delivered via Microsoft Teams. Three identical iterations were delivered to maximise attendance opportunities, each lasting approximately 40 minutes including time for questions. Session content was developed by the facilitator with reference to publicly available UKMLA documentation from the General Medical Council (GMC) and covered five core areas: paper design and delivery, question structure, content distribution across each paper as defined by the MLA content map, approaches to AKT-style multiple choice questions, and suggested revision strategies and resources.

The second session was an interactive in-person session held one month later at the same hospital and open to the entire final-year cohort, regardless of attendance at the first session. Two identical iterations were delivered on the same day, each lasting approximately 75 minutes. The session followed a fast-paced question-based format using curated AKT-style MCQs, alongside a sample from the Medical Schools Council's (MSC) officially released UKMLA AKT practice papers. For each question, students raised their hand to indicate their chosen option (A-E). The correct answer was then revealed and discussed by the facilitator, and chocolates were distributed for correct first answers as a low-stakes incentive. Questions spanned a broad range of specialties and were interspersed with summary slides on high-yield content. All sessions were facilitated by a Teaching Fellow associated with the hospital,

who was also a recent graduate of the same medical school, and who had previously sat and passed the pilot UKMLA AKT in 2024.

Outcome measures

For the first session, four outcome domains were assessed, mapped to the project standards: (1) self-reported preparedness for the UKMLA AKT; (2) understanding of exam structure (question style, test format, and content distribution); (3) confidence approaching AKT-style multiple-choice questions (MCQs); and (4) confidence in the appropriateness of revision resources being used. Each was assessed using a five-point Likert scale (1 being 'strongly disagree', to 5 being 'strongly agree'). The pre-session questionnaire additionally captured how long students had been preparing for the exam and which revision resources they were using or intending to use. The post-session questionnaire included a single choice question on intention to attend the planned follow-up interactive session, and two free-text items inviting suggestions for content to be covered at the second session and any further suggestions to support AKT preparation.

The questionnaires were developed specifically for this evaluation by the facilitator, with reference to the project standards agreed with the final-year exams lead and the GMC requirements for the UKMLA AKT, and were not adapted from any previously published instruments. The four core Likert items were retained between the pre- and post-session questionnaires to allow direct comparison, with minor wording adjustments to reflect the temporal context, for example, "how prepared do you currently feel" became "how prepared do you now feel". The questionnaire was not formally validated. The full questionnaires are provided as Additional file 1 (pre-session questionnaire for session one), Additional file 2 (post-session questionnaire for session one), and Additional file 3 (post-session questionnaire for session two).

For the second session, three outcome domains were assessed using a single post-session questionnaire: (1) enjoyment of the session; (2) perceived relevance of questions to the AKT; and (3) perception of the session as fun and interactive. Each was assessed using the same five-point Likert scale. The questionnaire also included a categorical item asking whether respondents had managed to ask the questions they had (yes, no, not sure) and two free-text items inviting comments on what had been particularly good about the session and what could be improved.

Data collection

The first session pre-session questionnaire was administered immediately before each online session, which themselves took place in mid-January 2026, approximately two months before the AKT. The post-session questionnaire was administered immediately following each session. The second session questionnaire was administered immediately following each in-person iteration. All questionnaires were

completed anonymously and were not linked at the individual level, so responses across the two sessions represent independent samples drawn from the same eligible cohort.

Data analysis

Data analysis was run on the results from the first session questionnaires. Responses were exported from the online survey platform into Microsoft Excel for descriptive analysis and into Python (SciPy) for inferential analysis. For each Likert item, pre- and post-session response distributions were compared using the Mann-Whitney U test, appropriate for ordinal data from independent samples. Responses were additionally dichotomised into “agree or strongly agree” versus all other responses, and compared using Fisher’s exact test, which was preferred over chi-squared given the small expected cell counts. A two-sided p-value of less than 0.05 was considered statistically significant. No correction for multiple comparisons was applied given the exploratory nature of this evaluation. Free-text responses were reviewed by the facilitator and grouped descriptively by content area.

Results

Participation

The pre-session questionnaire was completed by 27 of 156 eligible final-year students (response rate of 17.3%). The post-session questionnaire was completed by 18 students (response rate of 11.5%) across the three online sessions. Attendance at the sessions exceeded the number of post-session responses, indicating that not all attending students completed the post-session evaluation. As questionnaires were anonymous and unpaired, individual-level change could not be assessed. Results are therefore reported as differences between two independent samples drawn from the same cohort.

Baseline characteristics and revision behaviour

At baseline, the majority of respondents had begun preparing for the AKT: 13 of 27 (48.1%) reported preparing for more than one month, 11 (40.7%) had started within the past month, 1 student has started in November 2025 with limited intensity, and 2 (7.4%) had not yet started. Use of commercial question banks was widespread. Passmedicine was used or intended to be used by 26 of 27 students (96.3%), Geeky Medics by 17 (63%), and Quesmed by 8 (29.6%). Smaller numbers reported using MCQBank, Anki and Zero to Finals.

Comparison of pre- and post-session responses

Improvements were observed across all four Likert outcomes following the intervention (Table 1).

Table 1

Comparison of pre- and post-session Likert responses across the four outcomes for the first session.

Outcome	Pre-session, n/N (%) agreeing or strongly agreeing	Post-session, n/N (%) agreeing or strongly agreeing	Absolute change (percentage points)	Mann-Whitney U; p-value	Fisher's exact p-value
Preparedness for the UKMLA AKT	2/27 (7.4)	6/18 (33.3)	+ 25.9	131.0; 0.005	0.045
Understanding of exam structure	8/27 (29.6)	15/18 (83.3)	+ 53.7	81.5; <0.001	< 0.001
Confidence approaching AKT-style MCQs	9/27 (33.3)	11/18 (61.1)	+ 27.8	152.5; 0.022	0.125
Confidence in revision resources	5/27 (18.5)	17/18 (94.4)	+ 75.9	51.5; <0.001	< 0.001

The proportion of students who agreed or strongly agreed that they felt prepared for the UKMLA AKT rose from 7.4% (2/27) before the session to 33.3% (6/18) afterwords, an absolute increase of 25.9 percentage points (Mann-Whitney U = 131.0, p = 0.005; Fisher's exact p = 0.045).

The proportion of students who agreed or strongly agreed that they understood the structure of the exam rose from 29.6% (8/27) to 83.3% (15/18), an absolute increase of 53.7 percentage points (Mann-Whitney U = 81.5, p < 0.001; Fisher's exact p < 0.001). the median response shifted from "neither agree nor disagree" pre-session to "agree" post-session.

The proportion of students who agreed or strongly agreed that they felt confident approaching AKT-style MCQs rose from 33.3% (9/27) to 61.1% (11/18), an absolute increase of 27.8 percentage points. The shift in the underlying response distribution was statistically significant on Mann-Whitney testing (U = 152.5, p = 0.022), while the dichotomised comparison did not reach statistical significance (Fisher's exact p = 0.125), reflecting the more conservative nature of the dichotomised analysis with these sample sizes. Notable, while 4 out of 27 students (14.8%) disagreed or strongly disagreed with this statement before

the session, no student selected these responses otherwise.

The largest change was observed in confidence in revision resources. The proportion of students who agreed or strongly agreed that they were using the right resources to prepare rose from 18.5% (5/27) to 94.4% (17/18), an absolute increase of 75.9 percentage points (Mann-Whitney U = 51.1, p < 0.001; Fisher's exact p < 0.001). The proportion expressing uncertainty (neither agreeing nor disagreeing) fell from 66.7% (18/27) before the session to 5.6% (1/18) after.

Intention to attend follow-up session and free-text feedback

Of the 18 respondents, 16 (88.9% indicated that they intended to attend the planned follow-up interactive session and 2 (11.1%) were unsure. No respondent indicated that they did not intent to attend.

Free-text suggestions for content to be covered at the second session focused on high-yield topics, with specific requests including renal medicine, urology, cardiology, haematology, children's health, and mental health. Several respondents also requested guidance on question-answering strategy, particularly for situations where the answer choices were similar.

Second session data

The second session in the revision series was delivered in person for the same eligible cohort. The session was delivered twice on the same day using identical content to maximise attendance opportunities. Fifty students attended in total across the two iterations, representing 32.0% of the eligible cohort. Forty-two anonymous feedback questionnaires were returned (response rate of 84%).

Three five-point Likert items assessed students' experience of the session (Table 2). Forty-one of the forty-two respondents (97.6%) agreed or strongly agreed that they had enjoyed the session, that questions were relevant to the AKT, and that the delivery was fun and interactive. Median responses were 5 ("strongly agree") for all three items. Mean responses were 4.74, 4.88 and 4.81 respectively. A single respondent rated all three items as 1 ("strongly disagree") with no accompanying free-text comment; this response is reported as received with no exclusion. 36 of 41 (87.8%) respondents answered "yes" to whether they had managed to ask any questions they had, 3 (7.3%) answered "not sure" and 2 (4.9%) answered "no". One respondent did not answer this item.

Table 2
Student-reported feedback on the second, interactive revision session (n = 42).

Outcome	n/N (%) agreeing or strongly agreeing	Mean (SD)	Median
Enjoyed the session	41/42 (97.6%)	4.74 (0.70)	5
Questions were relevant to the AKT	41/42 (97.6%)	4.88 (0.63)	5
Delivery was fun and interactive	41/42 (97.6%)	4.81 (0.67)	5

Free text responses were largely positive, with respondents valuing the interactive format, the breadth of specialties covered, and the immediate explanation of answers:

Super interactive and really good to go through questions as a group with discussion and chance to ask questions. Really enjoyed thank you

Covered lots of areas that are easy to forget or be confused by

Constructive suggestions clustered around two themes. Several respondents proposed replacing the hand-raising format with a digital polling tool, as they wished for all students to have an opportunity to answer:

Use of slido/menti/Kahoot so everyone gets a chance to answer and a slower pace so we get chance to properly consider the question before moving on.

One respondent with dyslexia explicitly commented on the impact of the fast pace on their ability to engage:

It was a bit of a stressful format. I have dyslexia so it takes me a bit longer to read/process so if it had just been a bit slower I would have felt more able to join in more.

Several respondents also requested longer sessions, more frequent sessions and the inclusion of more data interpretation questions.

Discussion

This study intended to be an evaluation of a pilot revision programme for the UKMLA AKT, to help orientate students to the structure of the exam, increase confidence approaching questions and allow students to feel more prepared for the exam. The largest effects of this session were seen in increased confidence in revision resources and understanding of exam structure. A smaller positive shift was observed in confidence approaching MCQs. There was a strong stated intention to attend the planned follow-up session, suggesting that students found the first session useful.

The AKT now being mandatory for provisional GMC registration [1] raises the stakes as the responsibility to ensure students are well prepared falls on institutions. The use of commercialised question banks for national licensing exams is not a UK-specific anomaly and has been seen in the United States with the USMLE too [11]. Alongside this, UK medical schools differ substantially in their formal teaching, meaning students approaching a national licensing exams are doing so from differing starting points [12]. This means institution-level guidance to prepare for this exam becomes more important as students cannot rely on national consistency in teaching to prepare them for this exam. This gap becomes addressed with the introduction of a session like the one piloted in this study.

The improvement in understanding of exam structure suggests that test-format knowledge is a legitimate and separable target for preparation, distinct from knowledge mastery itself [13]. This study found a large shift in structure understanding from a single session, implying that this is a malleable, teachable domain.

The confidence shift observed in approaching AKT-style MCQs, whilst smaller in magnitude than other domains, warrants consideration. Although the underlying response distribution shifted significantly on Mann-Whitney testing, the dichotomised analysis did not reach statistical significance, possibly because confidence in approaching unfamiliar questions is more likely to develop through repeated practice with feedback than through a single educational session. Confidence in test-taking is recognised as a contributor to exam performance, and early-stage improvements may compound over time as students engage in further practice [13]. This supports the case for a longitudinal series of sessions, in which repeated exposure to AKT-style questions and structured feedback could produce more sustained improvements across all domains [5, 6]. The strong intention to attend a follow-up session suggests students themselves recognise this value, and future work should seek to capitalise on this engagement by embedding such sessions systematically within the final year curriculum.

The largest observed effect in this study was in confidence in revision resources, with the proportion of students agreeing rising from 18.5% to 94.4% following the session. This is notable given that uncertainty about which resources to use is a commonly reported source of stress among students preparing for high-stakes examinations [14]. For the UKMLA AKT specifically, the landscape of available revision materials is relatively new, and students may lack the peer networks or institutional guidance needed to navigate it effectively. A structured programme that signposts evidence-based and AKT-aligned resources may therefore address a disproportionately large source of anxiety regarding examination preparation. This finding aligns with broader evidence that students who are guided towards effective, evidence-based revision strategies, rather than left to default to less effective approaches such as rereading, demonstrate more efficient self-directed learning [5].

These findings have several practical implications. The results of this study suggest that structured, low resource interventions can produce measurable shifts in preparation outcomes. This is relevant for medical schools operating under resource constraints. Furthermore, such interventions may reduce the reliance on commercial resources which carry cost barriers and may widen inequalities. Recent graduates as facilitators may be particularly credible to students, representing a sustainable delivery model and providing near-peer support.

The interactive in-person session that followed addressed a need explicitly articulated by students in their post-first-session feedback, which was a desire for hands-on practice with AKT-style questions, immediate discussion of answers, and exposure to high yield content. Quantitative feedback was uniformly strong across all three measured dimensions, and free-text comments reinforcing the value of an interactive, fast paced format with immediate explanation of answers. The use of curated questions alongside a sample from the official MSC UKMLA AKT practice papers grounded the session in resources of an identical format that students were already using independently, while the facilitator-led discussion provided contextual reasoning that question banks alone do not offer. This combination aligns with the test-enhanced learning literature, where the benefit of practice testing is amplified by feedback and explanation [6, 7].

The most consistent suggestion for improvement was to replace hand-raising with a digital polling platform. While the original format was chosen partly to encourage active verbalisation, students' feedback indicated that quieter or less confident students felt excluded from answering. Polling tools would allow students to register an answer simultaneously and may better realise the inclusive intention of the interactive format. Furthermore, one respondent with dyslexia commented that the fast pace limited their ability to engage. Although a single comment, it raises a meaningful accessibility consideration. Time-pressured question delivery, while pedagogically defensible as preparation for a timed exam, may disadvantage students with specific learning differences in a revision setting where the goal is learning rather than simulating exam conditions.

Limitations

This study has several limitations. The small sample size and low response rates increase the risk of self-selection bias as students that are more anxious or more motivated about the exam may be over-represented in the cohort completing the session. Given the nature of the anonymous, unpaired questionnaires, within-person change analysis could not be completed, and observed differences could partly reflect compositional differences between the two samples. This particular study is also focused on a single hospital base, single facilitator and single institution that authored this report, which risks bias and limits generalisability, although mitigated by anonymous response collection and transparent reporting of all results, including those that did not reach statistical significance.

All outcomes were self-reported confidence and preparedness measures, sitting at the lower levels of Kirkpatrick's evaluation hierarchy [15]. This evaluation provides no evidence of behaviour (Level 3) or actual AKT performance (Level 4).

Conclusion

This pilot evaluation suggests that a brief, structured revision programme delivered by a recent graduate can produce measurable improvements in final-year medical students' self-reported preparedness for the UKMLA AKT, their understanding of structure of the exam, their confidence approaching AKT-style MCQs and their confidence in the revision resources they are using. The findings indicate that institution-led preparation may help to address an unmet informational need that is currently met largely by commercial providers, with potential implications for equity of access. While the limitations preclude firm conclusions about effectiveness, the consistency and scale of observed shifts support further evaluation of this model in larger, multi-centre studies linking intervention exposure to actual UKMLA AKT performance.

Abbreviations

UKMLA: United Kingdom Medical Licensing Assessment

AKT: Applied Knowledge Test

GMC: General Medical Council

USMLE: United States Medical Licensing Examination

MCCQE: Medical Council of Canada Qualifying Examination

MCQ: Multiple-choice question

MSC: Medical Schools Council

Declarations

Ethics approval and consent to participate

The need for ethics approval was assessed using two frameworks, both the Health Research Authority (HRA) decision tool and the University of Manchester ethics decision tool, which is administered within the University's research ethics framework, overseen by the University Research Ethics Committee (UREC). The HRA tool determined that this study did not constitute research and therefore does not require formal NHS Research Ethics Committee approval. The University of Manchester ethics decision tool classified the study as a service evaluation initiative, and deemed that submission for formal ethics committee approval was not required. All procedures involving human participants were conducted in accordance with relevant guidelines and regulations, including the principles of the Declaration of Helsinki. All participants provided informed consent for their anonymised responses to be used for educational evaluation purposes via an explicit consent question at the start of each questionnaire.

Consent for publication

Not applicable

Availability of data and materials

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests

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Authors' contribution

MK conceived, designed the study and delivered the revision sessions. MK and DW drafted the manuscript. All authors contributed to the interpretation of the data, critically revised the manuscript, and approved the final version.

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Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Additionalfile1Presessionquestionnaire.docx
- Additionalfile2Postsessionquestionnairesessionone.docx
- Additionalfile3Postsessionquestionnairesessiontwo.docx