INTERACTIVE LEARNING SOLUTION FOR ENHANCED RETENTION OF INFORMATION LITERACY SKILLS

CHALLENGE OWNER

This challenge is part of the **innovPlus Challenge 2024 Run 2**, organised by the Institute for Adult Learning's inlab. As part of the iN.LEARN 2.0 initiative, innovPlus facilitates the rapid development and pilot deployment of prototypes that can address learning challenges and exploit opportunities for better Learning and Development (L&D) and Continuing Education and Training (CET) outcomes, including design, delivery and assessment.

innovPlus is organised as a competition for training providers, organisations with L&D departments, learning experts, solutionists and technology partners to collaborate and present a holistic solution to real learning challenges faced by the training provider, organisation and/or groups of learners. Please refer to Annex A for more background on innovPlus.

The Challenge Owner is a School of Medicine in an Institute of Higher Learning, which aims to offer innovative medical education through its undergraduate and graduate programmes, and to be a centre for transformative research. The medical school works closely with a healthcare group partner, and other healthcare institutions in Singapore as teaching sites for their medical students, with the aim to augment Singapore's healthcare manpower to meet a rise in healthcare demands of Singapore's growing and ageing population.

CONTEXT

CURRENT SITUATION

Information literacy (IL) is the ability to find, evaluate, and effectively use information for knowledge acquisition, decision making, and problem solving. With diverse and abundant information available through various sources like libraries, academic databases and the internet, IL is a fundamental competency in higher education and a critical skillset applicable across all academic disciplines. For medical students, gaining proficiency in IL skills is essential to effectively navigate diverse databases and conduct high-quality scholarly research during their academic years and applicable for their future careers, to enhance research capabilities in practicing Evidence-Based Medicine (EBM).

EBM involves using the best available evidence from scientific research to make informed clinical decisions. This requires strong mastery and application of IL skills to 'systematically search', critically appraise information, and produce robust systematic reviews or meta-analyses.

Beyond medical students, IL is equally important for healthcare professionals conducting advanced research and integrating evidence into clinical practice to ensure effective and informed patient-care decisions. Additionally, patients and patient advocates who are not medically trained, benefit from IL skills to find and interpret reliable health information enabling them to communicate more effectively with healthcare providers and support their health needs.

PAST AND CURRENT SOLUTIONING EFFORTS

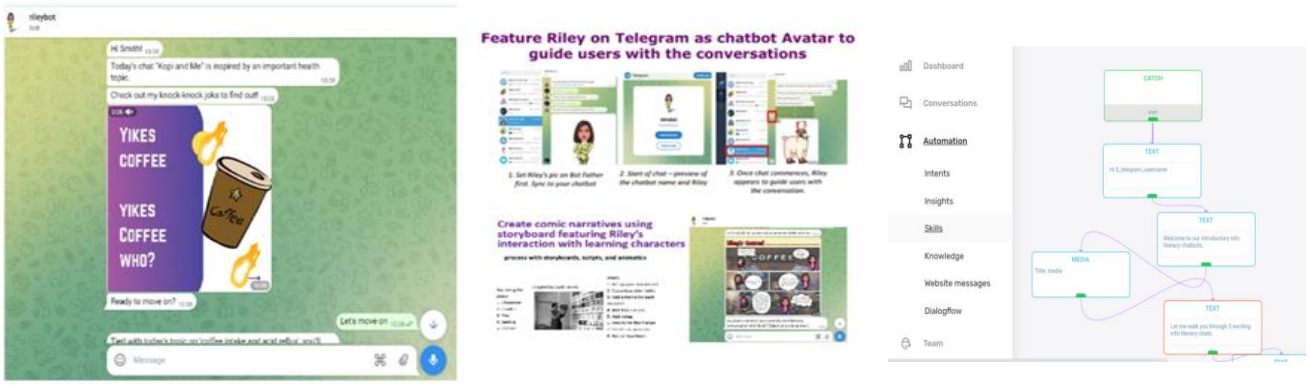
Information Literacy (IL) education is a key component of an Evidence-Based Medicine (EBM) curriculum for first, second, and third-year undergraduate medical students. While the EBM curriculum adopts an effective pedagogy approach, students still rely heavily on traditional resources like PowerPoint slides, PDFs, or pre-recorded lectures. Similarly, healthcare professionals, patients, and patient advocates rely on such static materials from research workshops, seminars, or talks. These traditional resources lack flexible, "on-the-go" learning support, making it difficult for busy doctors to fit IL learning into their demanding schedules, while patients and patient advocates need self-paced,

accessible and interactive tools to acquire essential IL skills for navigating health information effectively.

Although traditional static resources provide fundamental knowledge, medical students and healthcare professionals engaged in research often struggle to retain and effectively apply IL skills over time, relying on librarians for guidance or retraining. By Year 4, medical students undertake intensive six-week full-time scholarly research projects, often resulting in extensive online consultations with medical librarians. These consultation sessions, typically scheduled for 30 minutes, can last up to one hour, to help students recall and apply basic IL skills and research techniques. Depending on the complexity of their research topics, students and healthcare professionals may require additional follow-up library consultations or retraining to fully grasp and apply advanced search strategies.

As a supplementary tool to enhance IL skills, the Challenge Owner developed a novel, rule-based chatbot supported with text dialogues, basic customised videos, comic narratives, MCQ quizzes with no scoring and an avatar: Riley (refer to Diagram 1 below for sample). The content covered five basic IL skill topics which align with the EBM curriculum objectives and can be applied for medical undergraduate students. The prototype was developed inhouse through library-faculty collaboration under a small grant study, using free non-coding software for chatbot building, and integrated with and accessed through the Telegram messenger app via smartphone devices. A pilot study was conducted in 2023 on a small group of medical students and gathered positive preliminary findings on the Riley chatbot prototype's usability, satisfaction rate and qualitative feedback.

Diagram 1: Sample of the Riley chatbot prototype developed using a limited online software builder and integrated with the Telegram App for use on smartphone devices. The chatbot has basic interactive features without assessment functions.



Current teaching resources for IL are mainly static and lack interactive elements like real-time feedback and practice opportunities for medical students to refine their IL skills and promote long-term knowledge/skill retention. As a result, Year 4 students struggle to recall and apply the IL skills acquired earlier in their curriculum and rely heavily on library consultations to support their research projects, leading to high demand for medical librarians' consultation time, higher frequency for library consultation follow ups and reduced ability to search independently. This is unsustainable, especially with the increasing medical undergraduate student cohort size as well as similar requests from other research students pursuing postgraduate studies within the institution.

While the chatbot prototype developed by the Challenge Owner received positive preliminary findings from a test group of medical students, its basic, rule-based functionality is limited. It offers generic, pre-programmed responses that lack adaptation to varying skill levels or address assessment needs. Without advanced interactive features or personalized learning pathways, the chatbot lacks the ability

to engage users dynamically and provide tailored support. The core challenge lies in the deficiency of innovative, advanced digital instructional features that could supplement the existing IL training resources and enhance learning experience.

The Challenge Owner is seeking an adaptive and interactive solution that leverages AI and digital technologies to continuously support medical students in mastering and retaining Information Literacy (IL) skills, ultimately enhancing their research and information seeking capabilities to improve educational outcomes. This solution should be scalable to accommodate other medical learners, including healthcare professionals, patient and patient advocates, who have limited access to interactive IL training resources to accommodate "on-the-go" learning. The new innovative digital learning solution will provide personalized and adaptive learning experiences that cater to the unique needs and IL skill levels of each individual learner.

CHALLENGE STATEMENT

How might we create an interactive and adaptive interactive learning solution to promote continuous learning and retention of Information Literacy skills, tailored to support the individual research needs of different medical learners?

WHAT ARE WE LOOKING FOR?

The Challenge Owner is looking for an interactive learning solution to complement the IL skills provided by the formal EBM curriculum for medical undergraduate students and via workshops for healthcare professionals, patients and patient advocates. The IL skills specific for medical undergraduate students and healthcare professionals engaged in research are critical to support medical research which include (1) effective search through diverse medical databases, (2) extract relevant evidence and (3) appraisal of data. The solution for patients and patient advocates is more generic and intended for use by patient and patient advocates. The new digital learning tool should function as a self-directed learning tool that helps learners to develop, practice and retain a comprehensive suites of IL skills over the long-term. Prospective Solution Partners may propose solutions that either build upon the Challenge Owner's existing chatbot, or an entirely new solution.

The solution should meet the following criteria:

- Differentiated content and difficulty levels across user groups. Three levels of differentiated content should be offered, for *foundational, basic and advanced* content. Access to the content should be differentiated based on proficiency level and user profile (i.e. medical students, healthcare professionals, patients and patient advocates) considering cognitive load. The proficiency content, description, target audience, language medium, and formality of communication are outlined in Table 1.

Table 1: Overview of new digital tool developed for a range of medical learners

IL Proficiency Type	Description	Target Audience	Language Medium	Language Formality
Foundational	Designed to educate users to acquire basic search navigation skills to search for reliable articles on chronic diseases to combat "fake news" in medicine and manage their health conditions better.	Patients and Patient Advocates (no medical training)	English language Mandarin, Malay Tamil languages speech text	Layman/ Simple English

	Supported with customized video tutorials, games etc. Integrated with built-in translator to display other languages. Integrated with advanced technology functions			
Basic	Designed to educate users on acquiring basic search skills and techniques for finding relevant articles in medical databases. Supported with customized video tutorials, games etc. Integrated with advanced technology functions	Medical Students (Years 1, 2, 3 and 4) Healthcare professionals (Clinicians, Primary Care Doctors, Nurses, Pharmacist, Physiotherapist, Allied Health etc.)	English	Scholarly yet casual
Advanced	Designed to educated users with advanced search skills, focusing on complex search techniques and critical appraisal of scientific literature. Supported with customized in-depth video tutorials, games etc. Integrated with advanced technology functions	Medical Students (Years 2, 3 and 4) Healthcare Professionals (Clinicians, Primary Care Doctors, Nurses, Pharmacist, Physiotherapist, Allied Health etc.)	English	Scholarly yet casual

- Bite-sized modular content. IL content should be bite-sized to support short, self-paced learning to avoid information overload for learners.
- Customizable IL content. Allow project team to upload, customize, add on and update training content (e.g. videos, published articles) as needed. Content featured should include advanced technology features for selected parts for users to interact with the digital tool to promote engaged IL learning.
- Interactive features. Include interactive features such as animated avatars, interactive tutorials, customised video content, visual guides, and gamification features like quizzes or puzzle-based games to enhance user engagement and learning retention. For instance, a puzzle hunt text game can be designed as outlined in Table 2.

Table 2: Mapping of task, task instruction, IL skill and evidence-based medicine principles

Task	**Instruction**	**IL Skill**	**Evidence Based Medicine Principle**
Puzzle Hunt text game	Problem, Intervention, Comparison, Outcome (PICO) evidence search	Research as Inquiry Searching as Strategic Exploration	Assess the Patient Acquire the Evidence

- Assessment and reports. Include multiple-choice quizzes and assessments for users based on their IL skill proficiency scores, as detailed below. The new system should capture data on learners' performance and generate insightful reports for project team and users. The project team aims to incorporate a research component, inviting participants from various proficiency score groups for workshop training or focus group interviews to ascertain the proficiency levels. The proficiency scoring system is outlined below, enabling users to evaluate their IL skill levels and identify areas for improvement, particularly for novice learners:
    - **Score 9-10 (Expert):** 100% proficiency
    - **Score 7-8 (Proficient):** 50-80% proficiency
    - **Score 4-6 (Novice):** <40% proficiency
- Self-directed adaptive learning pathways. Allow learners to choose which content and areas they would like to practice and focus on based on their needs, for personalized and self-directed learning.
- Consultations with librarians. Support 30-minute regular driven consultations with medical librarians for complex questions and areas beyond the content provided in the solution.
- User feedback. Capture user feedback embedded in the solution quantitatively and qualitatively from users
    - Quantitative feedback: Engagement scores & User Satisfaction Rate
    - Qualitative feedback: Focus group discussions and Pre & Post Survey Results
- Data analytics. The aim is to study user engagement with the new digital learning solution, that captures various metrics. Examples include:
    - Overall usage statistics, frequency of repeat users, and the most accessed Information Literacy (IL) topics. These metrics will be analyzed to provide a clear understanding of user interaction patterns. It is essential to ensure inclusivity and representation in our data collection to reflect the diverse experiences of different user groups, to effectively meets the needs of medical learners at various expertise levels.
    - Proficiency scores and learner levels (Novice, Proficient, Expert) based on quiz or assessment results to measure the tool's effectiveness.
    - Comprehensive data analytics to evaluating response time, the tool's ability to handle multi-threaded conversations, and the quality, relevance, and clarity of information provided to users.

OVERALL PERFORMANCE REQUIREMENTS

- Scalable. The solution should be scalable to accommodate a range of different medical learners, while still maintaining a consistent and high-quality learning experience.
- User-friendly and accessible. The solution should be easy to use, to be accessible to a diverse range of users and motivate learners to be self-directed.
- On-demand. The solution should allow learning to be available anytime, anywhere on demand with the provision of secured credentials to access the tool for learning.
- Mobile and web-friendly. The solution should be accessible via mobile (e.g. via an app) as a priority but may also be web-based.
- Compatibility and integration. The solution should seamlessly integrate with the Challenge Owner's existing learning management system for students.
- Institutional Review Board (IRB) compliant. The solution should comply with the Challenge Owner's internal University's Institutional Review Board (IRB) guidelines dedicated to uphold internal university standards, ensuring the protection of human subjects in research by maintaining the highest ethical and integrity standards. The internal University's IRB also provides support to researchers, improving the quality of research through peer review and safeguarding the institution's reputation. It is responsible for conducting ethical reviews of all research proposals involving human participants, including those using personal data or human biological materials.

- Secure and PDPA-compliant. The solution should be secure to safeguard personal details (e.g. student IDs used for login) and access should be strictly limited to registered users.
- Standard IL guidelines. The solution must abide the standard IL guidelines based on the framework of information literacy for higher education by the Association of College & Research Libraries. This framework is organized into six interconnected frames of information literacy namely:
    - Frame 1: Authority Is Constructed and Contextual
    - Frame 2: Information Creation as a Process
    - Frame 3: Information Has Value
    - Frame 4: Research as Inquiry
    - Frame 5: Scholarship as Conversation
    - Frame 6: Searching as Strategic Exploration.

TARGETED LEARNERS /USERS

Primary and Secondary targeted learners / users of the envisaged solution (including estimated numerical figures)

- Estimated 1250 primary users per year, including 600 medical undergraduate students, 600 healthcare professionals, and 50 patient and patient advocates. This breakdown includes:
    - Medical Undergraduate Students : 150 students across four levels, totalling 600.
    - Healthcare Professionals: 600 professionals from partnering healthcare cluster, including Family Medicine doctors, general practitioners (GPs) from Primary Care Research Network, allied health professionals, and researchers in Singapore. Pilot sessions will be conducted face-to-face on Saturday afternoons.
    - Patient Advocates: 50 patients and patient advocates affiliated with the organisation's patient advocacy groups.

Prospective Solution Partners who choose to apply for this challenge must be registered and operating in Singapore. The prototype needs to be demonstrated in Singapore. The Solution Partner should allow the solution to be tested for at least 3 months, involving at least 100 users comprising 80 medical students (40 participants testing the new learning solution and 40 in the control group), 20 healthcare professionals (10 testing the new learning solution and 10 in the control group), and 10 patient advocates (5 testing the new learning solution and 5 in the control group). This testing phase will focus on collecting qualitative feedback and conducting pre- and post-surveys to assess the engagement level and effectiveness of the new solution. The insights gathered will be critical for informing necessary improvements to the project prior to further refinement and deployment.

MEASURES OF SUCCESS

- Enhanced User Engagement and Satisfaction. We will utilize data analytics gathered from comprehensive metrics and qualitative feedback from focus group interviews with various medical learners. Our goal is to achieve at least 90% positive feedback in user engagement and satisfaction levels through surveys, demonstrating the effectiveness of digital technology tools in enhancing learners' IL skills to complement static resources from traditional teaching sessions or the formal curriculum.
- Proficiency Improvement. Pre and post intervention assessments will be conducted to evaluate the improvement in IL proficiency scores, indicating knowledge gain and application of IL skills in respective research projects. We aim for at least 90% of learners to achieve proficiency as measured via surveys.
- IL Assessment Score Improvements. User performance on quizzes and assessments will be analyzed, tracking average scores and pass rates. We aim to achieve at least a 90% improvement in scores after utilizing the digital tool, reflecting its effectiveness in enhancing IL skills and educational outcomes.

- Enhanced IL Skill Retention. Throughout the grant period, the project team will focus on gathering qualitative feedback through pre and post surveys or focus group interviews to evaluate how well users retain IL skills over time for scholarly and individual research projects. We aim for at least 90% positive feedback regarding the digital tool's effectiveness in enhancing IL skills. As a continuation of the grant, a longitudinal study or case studies will be conducted to follow student cohorts until Year 4, assessing their IL skill retention as they undertake their scholarly research projects.
- Impact on Research Confidence. Users will be surveyed to measure their confidence in conducting research after using the digital tool, with changes tracked over time. The goal is to achieve at least 90% positive feedback on the digital tool's effectiveness in boosting users research confidence.
- Reduction in library consultation time. We will also monitor the library consultations time spent on medical students before and after the digital tool's implementation. The target is to reduce the duration of library consultation sessions, ideally maintaining the standard consultation time of 30 minutes and particularly follow-up consultations only to manage complex searches, by at least 50% over time.

POSSIBLE USE CASES

1. Interactive learning experience for user engagement and IL skill retention. Student A is a Year 4 medical undergraduate student working on a research project. Before beginning their research, Student A uses the solution to refresh the IL skills covered in earlier academic years. After logging into the new learning solution, Student A can access modular content on a range of IL skills tailored to their research needs and proficiency level as a medical student. The solution features interactive elements such as video tutorials, gamified quizzes, and animated avatars that guides Student A through the modules. These features keep Student A engaged, helping them better recall the IL skills. After familiarizing themself with the necessary IL skills using the solution, Student A can independently and effectively search through medical databases to identify relevant articles for their project, using their library consultation time with the medical librarian more efficiently, focusing only on complex questions and clarifications without revisiting basic IL skills.

2. On-demand access for self-directed learning. Dr. X is a primary care doctor conducting research on infectious diseases. After searching through the two medical databases Dr. X is familiar with, they use the solution to learn how to search through five other medical databases they have not previously used. The solution's bite-sized content and 'on-demand' accessibility allow Dr. X to fit their learning around a busy schedule. By using the solution, Dr. X is able to apply proximity operators and other advanced search techniques across a range of medical databases and learn how to rate the evidence for systematic reviews. This enables Dr. X to optimize searches across non-medical databases which are cross-disciplinary and comprehensively find and appraise the evidence needed to advance their research.

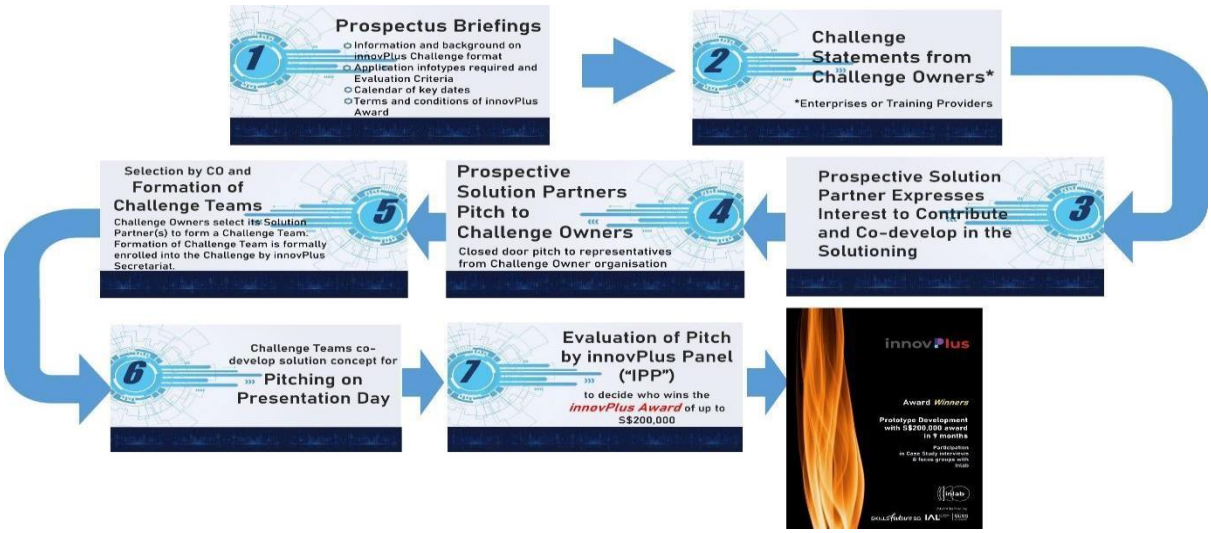
WHAT IS IN IT FOR YOU?

- Up to S$200,000 of prototyping grant (innovPlus Grant) for each winning Challenge Team of the innovPlus Challenge 2024 Run 2 (see Award Model) to develop and trial an innovative, feasible and scalable prototype that advances CET practice and learning outcomes.
- Access to IMDA'S PIXEL corporate innovation hub and complimentary innovation consultancies (e.g. Design Thinking, Digital Storytelling) for prototype development, where applicable.
- Co-innovate with the Challenge Owner with access to their expertise, facilities, and human resources in developing the solution, and potential to scale the successful solution for commercialization.

INNOVPLUS COMPETITION PHASE PROCESS FLOW

Diagram 1 illustrates the innovPlus process flow in the competition phase and the requirements for active involvement of each party. Stage 3 indicates the current stage of the competition, where Prospective Solution Partners are to express interest to contribute and co-develop solutions with the Challenge Owner through IMDA's Open Innovation Platform.

Diagram 1 - innovPlus Competition Phase Process Flow



The Challenge Owner will evaluate all proposals by Prospective Solution Partners received on the OIP based on the evaluation criteria below, and invite shortlisted partners to a second stage evaluation in the form of a pitch (Stage 4 of Diagram 1).

Solution Fit (30%)	Relevance: To what extent does the proposed solution address the problem statement effectively?
Solution Readiness (20%)	Maturity: How ready is the proposed solution to go to the market? Scalability: Is there any evidence to suggest capacity to scale? Does the proposed solution offer potential to also help other enterprises facing similar challenges (i.e. broader application, adaptation and transferability)?
Solution Advantage (30%)	Pedagogical Design: What sound pedagogical design approaches underpin the proposed solution to enhance effectiveness of learning or desired learning outcomes? Cost Effectiveness and Innovativeness: Is the solution cost effective and truly innovative? Does it make use of new technologies in the market, and can it potentially generate new IP? How sustainable and affordable is the estimated cost for pilot trial, deployment, software support and post-pilot rollout?
Company Profile (20%)	Business Traction: Does the product have user and revenue traction? Is the company able to demonstrate financial capability and resources to complete the prototype? Team Experience: Do the team members possess strong pedagogy and scientific/technical background?

Thereafter, the Challenge Owner will decide on the Solution Partner to form a Challenge Team to co-develop the idea into a potential solution (Stage 5 in Diagram 1). The Challenge Team will pitch their solution in the final round of the competition, known as the innovPlus Presentation Day. On that day, the Challenge Teams will present how the envisaged solution could deliver the stated learning outcomes with a presentation and demonstration to the innovPlus Panel (Stage 6 in Diagram 1). The innovPlus Panel shall have the final decision on whom the eventual Grant awardees shall be (Stage 7 in Diagram 1). Please refer to the Terms and Conditions in Annex B for further details.

AWARD MODEL

Up to S$200,000 of prototyping grant (innovPlus Grant) will be awarded to each winning Challenge Team of the innovPlus Challenge 2024 Run 2 for the development and pilot deployment of a prototype solution. The grant will NOT be inclusive of any applicable taxes and duties that any of the parties may incur. Guidelines on the grant disbursement quantum, milestones, timeline and supported cost items are stated in the Terms and Conditions under Annex B.

*Note that a finalist (prospective Solution Partner) who is selected to undertake the prototype will be required to enter into an agreement with Challenge Owner(s) that will include more detailed conditions pertaining to the POC/prototype.

SUBMISSION GUIDELINES AND DEADLINE

The proposal **must** include the following:

- Completed and countersigned innovPlus Expression of Interest (“EOI”) Form
- 1 deck of slides in PDF format explaining the proposed solution, how it addresses the challenge statement and meets the desired performance requirements. To include information such as the proposed data inputs, system that the proposed solution will run on, potential benefits, the envisaged learning innovation, and the team’s implementation plan
- Video or pictures (300dpi) of any prototype or simulation, if applicable
- ACRA Business Profile (2024 or most recent) with certificate confirming registration of business
- Corporate Compliance and Financial Profile from BizFile (2024 or most recent)
- Track record of the company (including financial capability to complete the project) / CV of the team

All submissions must be made by **15 November 2024, 1600 hours (SGT/GMT +8)**. inlab and IMDA may extend the deadline of the submission at their discretion. Late submissions on the OIP, or submissions via GeBIZ, will not be considered.

Annex A – About innovPlus

1. iN.LEARN 2.0 is an initiative launched by SkillsFuture Singapore to drive innovation in the Training and Adult Education ("TAE") sector from ideation to commercialisation through its three key programmes – the innovPlus, innovSpur and Sandbox. It will focus on four key areas:

   i. increasing the uptake of online and blended learning by individuals;
   ii. amplifying enterprises' adoption of innovative learning technology;
   iii. developing effective remote assessment and proctoring solutions for individual and enterprise-led training; and
   iv. developing effective placement solutions that tighten the industry-training nexus.

2. As part of iN.LEARN 2.0, innovPlus contributes to the initiative by facilitating the rapid development and pilot deployment of prototypes that can address learning challenges and exploit opportunities for better Learning and Development ("L&D") and Continuing Education and Training ("CET") outcomes, including design, delivery and assessment. It is organised as a competition for training providers, organisations with Learning and Development ("L&D") departments, learning experts, solutionists and technology partners to collaborate and present a holistic solution to real learning challenges faced by the training provider, organisation and/or groups of learners. innovPlus could cover any/all of the following areas of innovation:

   - Pedagogy / Learning Design and Delivery
   - Learning technology
   - Training management
   - Application of skills and workplace performance
   - Assessment and credentialing
   - Remote assessment and proctoring
   - Hybrid Mode
   - Adaptive Learning
   - Blended Learning
   - Workplace Learning

3. innovPlus comprises three rounds of evaluation:

   i. inlab of Institute for Adult Learning (IAL) will assess if the stated Challenge Statement meets the eligibility criteria and competition guidelines stated in the Terms and Conditions under Annex B.
   ii. Participating organisations as Challenge Owners ("CO"), who are seeking solutions to their learning challenges, will hear pitches from prospective Solution Partners ("SP") on how their challenges can be overcome and select the partners whose ideas they assess to best meet their needs. The Challenge Owners and their selected Solution Partner(s) will then form a Challenge Team ("CT") to co-develop the ideas into a potential solution.
   iii. The Challenge Teams pitch their solutions in the final round of the competition, known as the innovPlus Presentation Day. On that day, the teams will present how the envisaged solution could deliver the stated learning outcomes with a presentation and demonstration to the innovPlus Panel ("IPP").

4. innovPlus is conducted once every six months. Prototyping grants, each up to **S$200,000**, could be awarded to the winning concepts to develop a prototype[1] for pilot testing with actual learners/users[2] within a maximum duration of 9 months[3].

[1] A *prototype* is defined as an original and novel model, form or solution, with its primary utility being to advance more effective learning. The key operators in this definition, 'original', 'novel', and 'more effective learning', must be clearly conveyable and verifiable.

[2] *Actual learners/users* is defined as the persons who will benefit from resolving the learning challenge, who you can commit to (primary target), e.g. within your organisation. Pilot testing shall encompass minimally 30% of the targeted primary learner/user population, which cannot be less than 15 users per pilot run.

[3] 6 months to complete a workable Proof of Concept with User Acceptance Test, and an additional 3 months to show scaling up of prototype (where applicable) and usability to minimally 30% of **primary** targeted learner/user population, which cannot be less than 15 users per pilot run.

Annex B – innovPlus Challenge and Award Official Terms and Conditions

As part of participating in innovPlus and submitting the innovPlus application form, all participating organisations and individuals agree to accept the following terms and conditions governing the innovPlus Challenge (and all its associated processes) and the innovPlus Grant offer (if applicable):

DESCRIPTION OF THE GRANT

1. The innovPlus Challenge ("innovPlus") is a competitive learning innovation grant challenge that awards a prototyping grant of up to S$200,000 to winning organisations to develop and trial an innovative, feasible and scalable prototype that advances CET practice and learning outcomes. The innovPlus Challenge is organised by inlab of the Institute for Adult Learning ("IAL"). Winning submissions will be as determined by the innovPlus Panel ("IPP") (defined below) in accordance with the prevailing Evaluation Criteria and Terms and Conditions as administered by the innovPlus Secretariat. The innovPlus Grant is funded by SkillsFuture Singapore ("SSG") and is administered by SUSS-IAL, by appointment of SSG. IAL is an autonomous institute of Singapore University of Social Sciences ("SUSS").

ELIGIBILITY

2. The innovPlus Challenge is open to organisations that are a registered business entity in Singapore (a valid ACRA or UEN identifier will be required for application), to participate as prospective Challenge Owners. Government Agencies and Statutory Boards are not eligible to participate[4]. Prospective Challenge Owners will be subjected to financial assessments. Only Singapore-registered business entities may apply to participate as a prospective Solution Partner.

3. Challenge Owner organisation and its choice of Solution Partner(s) shall form a Challenge Team.

4. Challenge Owner organisation[5] can be granted the innovPlus Grant for up to a maximum of two grants at any time within three years from date of the first award. The clock will reset after sitting out of two innovPlus Challenge runs.

5. Solution Partner organisation can be granted the innovPlus Grant for up to a maximum of three grants at any time within three years from date of first award. The clock will reset after sitting out of two innovPlus Challenge runs. Additionally, each Solution Partner is allowed to enrol in a maximum of two Challenge Teams in each eligible run.

HOW TO PARTICIPATE

6. To participate in the innovPlus Challenge/, applicants may apply as either a Challenge Owner or as a Solution Partner. Application must be made using only the following official innovPlus application forms:

   a. innovPlus Challenge Statement Application Form (for prospective Challenge Owner);

[4] Govt Agencies list: gov.sg | Ministries (sgdi.gov.sg)

Statutory Board list: gov.sg | Statutory Boards (sgdi.gov.sg)

[5] Second Grant Award must be to another Department/Division/Business Unit of the awarded organisation.

b. innovPlus Expression of Interest ("EOI") Form (for prospective Solution Partner, with respect to the specific Challenge Statement published);

c. Part 1 of innovPlus Challenge Team Formation Submission Form (for enrolment of team formation);

d. All parts of innovPlus Challenge Team Formation Submission Form; and

e. Projected budget and project schedule using prescribed innovPlus templates.

Only application forms downloaded from the official innovPlus webpage on SUSS-IAL's website will be accepted into the innovPlus Challenge. Completed forms must be submitted by email to the innovPlus Secretariat and inlab at the email addresses specified in the header section of all application forms. Only fully completed application forms received by the stipulated respective deadlines for each stage of the innovPlus Challenge will be considered for acceptance and enrolment into the innovPlus Challenge.

A submission may, in Secretariat's sole and absolute discretion, be rejected if it fails to follow the technical, creative, and legal requirements specified on the innovPlus webpage, the official innovPlus Infokit and in these Official Terms and Conditions. Applications that do not follow all of the instructions, provide the required information in their application form, or abide by these Official Terms and Conditions or other instructions of Secretariat may be disqualified at Secretariat's sole and absolute discretion. All entries that are late, illegible, incomplete, damaged, destroyed, forged or otherwise not in compliance with the Official Terms and Conditions may be disqualified from the innovPlus at Secretariat's sole and absolute discretion. Applications generated by script, macro or other automated means and entries by any means which subvert the entry process are void. All entries become the physical property of SUSS-IAL and Secretariat and will not be acknowledged or returned. Assurance of delivery of entries is the sole responsibility of the Applicant.

Additionally, applicants shall attend the activities organised by the innovPlus Secretariat to improve the capability of the Challenge Teams in identifying the root cause to their challenge and developing the appropriate solutioning. These include the innovPlus Prospectus Briefing, workshops and coaching sessions, and any other sessions deemed relevant to innovPlus participation. Failure to do so could lead to disqualification from the competition.

SUBMISSION GUIDELINES

7. Submission for evaluation by IPP pursuant to the award of the innovPlus Grant, will be in the following three parts:

   a. Paper submission via the official innovPlus Challenge Team Formation Submission Form and the projected budget and project schedule, by the stipulated deadline, of no less than 21 calendar days before Presentation Day. The paper submission is to be in English. The paper submission must answer the prompting guides as set out in the innovPlus Challenge Team Formation Submission Form;

   b. Presentation and demonstration of any concept mockup/wireframe (where applicable), in English, by (up to) five members of the Challenge Team to the IPP on Presentation Day (as informed by Secretariat) of no more than 15 minutes. This will be followed by engagement with IPP for up to 15 minutes. The session will be conducted in closed-door to only the IPP in the Pitching Room.

The Challenge Team must have all rights, clearances, permissions, approvals and/or consents necessary for their Submission, including, but not limited to, music rights, releases from all persons listed in the submission, location releases for all recognisable locations, and releases from all and any person who participated in the production of the Submission. In the event that the Challenge Team does not have the appropriate rights, the Submission may be disqualified at the Secretariat's sole discretion. SUSS-IAL reserves the right to disqualify any entries if it views their materials to contain contents (e.g. text, sound or images) that in SUSS-IAL's opinion to be offensive, inappropriate, or that will cast innovPlus, Innovation Centre, SUSS-IAL or SUSS in a negative light.

The above specified three parts shall collectively form the Submission of each enrolled Challenge Team, and shall be the basis by which each Challenge Team is evaluated for the Grant. Challenge Teams awarded the Grant, shall be held accountable to the Submission, and be funded to deliver, complete or report on all parts of this Submission, to qualify for a claim on the Grant. Should the Challenge Team be unable to deliver on the Submission, the Team agrees for SUSS, acting through SUSS-IAL, to recover any grant already disbursed, and any liquidated damages resulting from the disbursement, so decided at the absolute discretion of SUSS-IAL.

EVALUATION OF SUBMISSIONS

8. On Presentation Day, all Submissions will be evaluated by the innovPlus Panel ("IPP"), which consists of a panel of institutional/industry/pedagogy experts based on the following evaluation criteria:

   a. Concept

      - Provide grounds to justify why the challenge should be addressed or taken on and how the proposed solution addresses the challenge / opens up opportunity for better quality CET outcomes and delivery; and
      - Extent objectives, goals and desired outcomes can be achieved.

   b. Innovation

      - Extent proposed innovation goes beyond known / existing solutions with (a) clear innovative value and (b) absolute valued added;
      - Potential for spin-offs to be generated from the proposed innovation e.g. in user / learning experiences for other CET professionals, learners and/or organisations; and
      - Evidence of sound pedagogical design underpinning the proposed solution to enhance effectiveness of learning or desired learning outcomes.

   c. Impact and Scalability

      - Demonstrates feasibility of implementation organisation-wide, sector-wide or sizeable segments of the workforce. Solutions includes an evaluation process, success indicators and impact measurement; and
      - Offers potential to also help other enterprises facing similar challenges (i.e. broader application, adaptation and transferability)

   d. Project and Implementation Team

      - Team consists of members from different disciplines

- Has a credible and realistic plan, budget and schedule to complete project in specified duration (maximum of 9 months)
- Has a clear identification of all stakeholders involved in the project, with the relevant and necessary competencies and track records to ensure successful project delivery
- Demonstrates commitment to develop the prototype as envisioned. Presence of a dedicated project manager to oversee implementation and manage the project, including progress reporting, budget management, resource management, etc

e. Implementation Sustainability

- Extent of thinking and/or planning for roll-out of solution to rest of organisation, including possible costs and resources required
- Indication of project team's continued involvement in the roll-out plan

9. IPP shall have the final decision on whom the eventual Grant awardees shall be. The IPP may declare void any entry should they consider that there are no entries reaching the required standard, whereupon they can award prizes or not as they deem fit. No correspondence will be entered into or comment issued on any matters concerning the evaluation of entries, and no reasons be given for any decision made by the IPP.

10. Awards conferred are not transferable under any circumstances. In the event a winning team is unable and/or unwilling to accept the award or withdraw for whatever reason, SUSS-IAL reserves the right to award it to the next highest scoring team that meets the qualifying criteria.

QUANTUM AND ADMINISTRATION OF THE GRANT

11. Winners of the innovPlus Challenge shall qualify to draw down on a pre-approved innovPlus Grant ("Grant") of up to S$200,000, with a mandatory co-contribution of at least 10% of total prototype development cost, which can be in monetary form or in-kind[6].

12. The maximum grant amount of each award shall be exercised through a Letter of Award ("LOA") between Singapore University of Social Sciences ("SUSS") and the Challenge Owner organisation. Secretariat will consult the winning Challenge Team in working out and finalising the maximum grant amount and detailed budget for approval by SUSS-IAL, to constitute the LOA.

13. The Grant shall be disbursed in 4 tranches, strictly adhering to the stipulated milestone and timeline in the table below:

Tranche & Grant Quantum	Milestone	Milestone Timeline	Typical Grant amount
1st: 30% of maximum grant amount	Effect of LOA by signature of SUSS-IAL and Challenge Owner organisation	Start of prototype development	up to S$60,000

[6] To be supported with evidence for actual hourly rate charged (either with the payslip or a salary statement from HR)

2nd: 20% of maximum grant amount	Mid-Term Progress Report, Presentation and required claim documents	3 months after start of prototype development	up to S$40,000
3rd: 20% of maximum grant amount	1st part of Final Summative Report, Prototype completion, Presentation and required claim documents	Not more than 6 months after start of prototype development	up to S$40,000
4th: 30% of maximum grant amount	2nd part of Final Summative Report, Pilot completion and Evaluation, Final Presentation and required claim documents	6 to 9 months after start of prototype development	up to S$60,000

Besides the first advance disbursement of 30%, subsequent funds will only be reimbursed on the submission and approval of the required reports and expenses incurred according to the approved budget. Proof of payment needs to be furnished before the claim can be approved.

CONDITIONS AND REQUIREMENTS OF AWARDED CHALLENGE TEAM AND PROTOTYPE

14. The innovPlus Grant is awarded on the basis of the presented prototype solution (and its proposed functionalities, features, capabilities, outputs and deliverables) and the envisioned scalability and roll out of the prototype to its intended users. As the implementation team as submitted in the application is evaluated as a criterion, any change to the composition of the Challenge Team after award of Grant must be submitted in writing, through Secretariat, for SUSS-IAL's prior approval. Failure to do so could lead to automatic disqualification.

15. The awardees of the innovPlus Grant accepts the grant by signing a Letter of Award ("LOA") within 8 weeks from Presentation Day, comprising the terms and conditions governing the grant, including piloting the prototype with learners, submitting a pre- and post-evaluation report of the prototype's strengths and weaknesses and conferring non-exclusive, irrevocable, free right and license to the use of the prototype and all intellectual property and information generated resulting from the performance of the Project to SUSS-IAL for non-commercial, academic, research and development purposes, including, but not limited to, the purposes of proliferating the knowledge gained therefrom to the training and adult education (TAE) community. For the avoidance of doubt, the terms of the National IP Protocol[4] shall apply. For the avoidance of any doubt, the terms and conditions in the LOA are strictly non-negotiable.

16. In general, the prototype development grant offered in the innovPlus Grant will support the following cost items:
    - Fees of expert services from entities (organisation or individual) outside the composition of the Challenge Team, that are required in the areas of technical and development work, or for purposes such as research or advice, shall be limited to a cap of 10% of the approved grant amount;
    - Professional services as charged to the Challenge Owner organisation by the Solution Partner(s) of the Challenge Team;
    - Supplies that are necessary for the overall operation, development and pilot of the awarded solution;
    - Equipment that have direct contribution to the overall operation, development and pilot of the awarded solution;
    - Software and / or other licensing that are essential for the project and for the duration of the project; and
    - Others – items not in the above list but necessary for the conduct and successful delivery of the project could be included in the funding request, subject to the approval of SUSS-IAL.
17. The grant will not support cost items that do not contribute directly to prototype development such as marketing, networking and publicity. It will also not support capital equipment not essential to the project, maintenance cost for software licensing, GST, and travel (local and overseas).
18. The Challenge Team is required to prove cost transparency and reasonableness on request by SUSS-IAL on all cost items it is claiming for funding.
19. No claims can be made on any items that are not in the budget submitted together with the proposal made in the Challenge Team Formation form.
20. SUSS-IAL shall not be under any obligation to make any payment to the Challenge Team on claims of:
    - unsupported cost items listed in the approved budget;
    - qualified expenses but which no adequate proof of expenditure and proof of payments has been furnished;
    - qualified manpower costs but which no adequate proof of cost reasonableness provided upon request;
    - any amount that exceeds the cost items listed in the approved budget; or
    - any amount that is based on expenditure / payment not in compliance with prevailing procurement practices in terms of not being value for money.

21. The Challenge Team shall be solely responsible for its own partnership management and team work, including Intellectual Property ("IP") arrangements and development / implementation plan.

22. The Challenge Team shall undertake that it will not infringe the intellectual property rights or any other rights of any person, and will comply with all applicable laws at all times.

23. The winning Challenge Team shall grant consent to SUSS-IAL disclosing, in such manner as SUSS-IAL deems appropriate, in its (SUSS-IAL's) publicity materials of the team's participation, and setting out and publishing in its publicity materials, in such manner as SUSS-IAL deems appropriate, information regarding the participation, including:

    a. the materials submitted for the innovPlus Challenge and any other information pertaining to its proposal;

    b. the contents of the findings or results, report(s) or any part thereof the awarded project; and

    c. information arising from or pertaining to the reports or any presentation, seminar, conference, or symposium conducted by the team.

24. The Challenge Team agrees to indemnify and hold harmless SUSS-IAL against any and all actions, claims, demands, and proceedings in any way arising out of or connected with SUSS-IAL's use, reproduction, publication or dissemination in the manner mentioned above, and all costs, expenses, losses and liabilities, howsoever arising.

25. The Challenge Team shall ensure that all information about the team or proposal provided to SUSS-IAL pursuant to its participation and for the subsequent purposes of or connected with making claims, are true, accurate and complete to the best of the team's knowledge. In the event that it comes to the knowledge of the team that any information already provided is or has become inaccurate, untrue, incomplete or misleading, the team shall immediately notify SUSS-IAL of such inaccuracy, incompleteness, misleading nature, or untruthfulness, and provide such information in connection therewith as SUSS-IAL may request.

26. The innovPlus Grant will be withdrawn if:

    a. the Challenge Team is unable to perform the obligations set out in the LOA; or

    b. the Challenge Team commits a breach of any of the provisions of the LOA.

SHOWCASING OF INNOVATION DEVELOPMENT

27. The Challenge Team shall undertake to collaborate with SUSS-IAL in the development of case studies and/or research papers detailing the experience and insights gleaned from the prototype development and any trialing/pilot that ensued. No confidential or private information will be revealed through this effort.

28. The Challenge Team shall undertake to allow SUSS-IAL to disseminate the case studies and/or research papers in various formats including printed materials, online articles, video, audio, and other digital recordings to any individuals or organisations that it deems will benefit from the learning and sharing; and

29. The Challenge Team shall undertake to agree for SUSS-IAL to profile the companies and individuals involved, as well as the solution and/or prototype on the following platforms:

    a. SUSS-IAL professional development seminars and workshops;

    b. SUSS-IAL partner showcase for a period of 12 months;

    c. SUSS-IAL conferences and events, e.g. the Adult Learning Symposium and Learning Roadshows; and

    d. Conferences and events SUSS-IAL is participating in and where the themes / areas covered are aligned and of interest to the participants.

30. The full and prevailing terms and conditions of the innovPlus Challenge and innovPlus Grant can be found in the Challenge Statement application form, Expression of Interest and Challenge Team Formation submission form, and all applications submitted to the Challenge will be deemed to have accepted these terms and conditions.

31. SECRETARIAT of the innovPlus Challenge and innovPlus Grant is the inlab, acting on behalf of the Institute for Adult Learning ("IAL"), of 11 Eunos Road 8, #05-03, Singapore 408601, wherein IAL is an autonomous institute of the Singapore University of Social Sciences.

GENERAL

32. Depending on the prevailing implementation challenges and needs, innovPlus Secretariat reserves the right to amend and change the terms and conditions with approval from the Director of Innovation Centre, that complies with the intent and spirit of innovPlus.

33. SUSS-IAL reserves the right to disqualify any participant at any point in time during the innovPlus Challenge.

SUSS-IAL reserves the right to change these terms and conditions at any time without prior notice. In the event that any changes are made, the revised terms and conditions shall be posted on the innovPlus website immediately. Please check the latest information posted herein to inform yourself of any changes.