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For further information:

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Invitation to participate a research project entitled: Evaluation of Health Numeracy Webapp as a tool for mastering Numeracy tasks in health studies contexts.

Dear colleague

You are invited to take part in a research project in which we will be evaluating the Health Numeracy webapp (HNP webapp) a web application designed to help students improve their competencies with health numeracy funded by the Higher Education Quality Council of Ontario (HEQCO). The study is being conducted by professors Taras Gula (George Brown College), and Miroslav Lovric (McMaster University). There will be four separate elements to the research as described below requiring four distinct consents. Options to mix and match the consents will be presented at the end of this document.

Element 1: consent for permission to collect tracking information.

Element 2: consent to take post usage survey

Element 3: consent to interview

Element 4: consent to take a pre and post health numeracy task assessment

The goal for each of these is to evaluate the form and content of the application. We will not be evaluating the participants in the research nor sharing your participation with your professor or Teaching Assistants in the course you are taking.

Though the data collection is not anonymous (data for each element of the research will be tied to your institutional email address) we will ensure that it is confidential. Researchers and assistants responsible for your data collection will be the only ones to have access to information that can be used to identify you and will be responsible for anonymization (making your information anonymous). They will do so by creating individualized codes when downloading data and removing any fields that can be used to identify you. The information connecting your email address to the code will be stored in a private and secured OneDrive folder separate from anonymized data for analysis will be kept.

What is involved in each element of participation for this study?

Element 1: tracking. You will not need to do anything except provide us with consent. If you consent we will collect the same information that you and your teacher will have about your use of the HNP webapp including the following: time and date of usage, #of attempted questions, # of correct answers, score on each attempt of testing, scores broken down by unit/topic/lesson. If you choose not to consent you and your teacher will continue to get access to this tracking information for pedagogical purposes.

Your consent will help us learn about how students use this application and catch any units or topics in which the error rates are particularly high so we can catch the weaknesses that may be causing students unnecessary difficulties.

Though we will have access to your email address and name, that information will be removed as soon as it is downloaded from the HNP webapp and replaced with a code to anonymise your results. If you choose to remove consent for any reason please simply email the research assistant in charge of data collection (not your teacher) and your data will be removed from tracking.

Element 2: survey. If you consent to the survey you will receive a link by email to a survey asking a series of questions evaluating your experience of using the HNP webapp. The survey will be tied to your email address, but all information will be anonymized once downloaded from the online survey collection tool. You will receive \$10 gift card compensation for your time in completing this survey.

Element 3: interview. A sample of those of you who consent to Element 1(tracking) will be asked to take part in a semi-structured interview through which we hope to probe more deeply into your use of the webapp in the classroom. 20-30 minute long interviews will take place virtually and be audio recorded for transcription purposes. Your responses will be anonymized during the time of transcription. You will receive \$25 gift card compensation for your time in completing this interview.

Element 4: pre-post health numeracy task assessment. To gauge the effectiveness of the app we invite you to take part in a pre and post assessment. This assessment will ask you to complete a task that is appropriate to your program of study or course that you are taking and will challenge you in relevant competencies. It may involve more than one question and some reflection on your work (10 minutes for each assessment). We are not interested in evaluating you however, we are interested in any changes in your competency with the challenges you have been provided. You will receive \$10 compensation for your time in completing both parts of this challenge. Once the post-test challenge is completed and we connect it to your pre-test, results will be anonymized in the analysis.

Can I rescind (remove) my consent?

You can rescind your consent at any time, but not after the final anonymized data set has been created. At that point we will no longer be able to link back to your email address and it will be too late. In order to remove your consent please email the address provided at the bottom of this letter.

Who can participate in the research?

Anyone registered as a student in the courses using the HNP webapp that are included in the research project is eligible to take part in the research.

What are the risks and benefits of participating?

There are no known risks to participating in any of the activities. Those who participate will be contributing to a greater understanding of health numeracy and to helping improve HNP webapp. The nominal monetary compensations are meant to justify the time that you are volunteering to give to us and allay any costs incurred. Benefits to you include exposure to thinking about your health numeracy competencies from a fresh perspective.

What choice do I have?

Participation is entirely voluntary and confidential. You may decide to participate in only one of or a combination of elements, and you may withdraw your consent at any time up to the time when data is analysed (i.e. fully detached from your identity) The researcher may also withdraw a participant if it is considered in the participant's best interest. If this happens, the researcher will explain why and advise you about any follow-up procedures or alternative arrangements as appropriate.

All information collected about and during the focus groups will be confidential. No participant information will be released to the professors teaching your course. All information collected will have identifying information removed and replaced with a code, then stored securely and kept for a period of five years in a locked cabinet within the Administration offices of the Centre for Health Sciences (on a secured laptop belonging to George Brown College). At no time will any individual participant be identified, in any reports resulting from this study, nor will any information that can help identify an individual be reported.

When will the data collection take place?

Element 1: tracking will take place without any active participation of the individual. Consent simply allows the research assistant to tell the HNP webapp to add your name to the research tracking DB.

Element 2: survey will take place at different times within the different settings, but pretty close to the last due date for last assignment/test.

Element 3: interviewees will be recruited after surveys are complete and take place before the end of semester.

Element 4: numeracy task challenge pre-test will take place in September before engagement with the HNP webapp, and post-test will take place after completing all work with the HNP webapp.

How will the information collected be used?

After data analysis, the findings will be reported in summary format to the funder: Higher Education Council of Ontario (HEQCO) and then to the broader education and math education communities. Data analysis for Element 1, 2, and 4 will be quantitative in nature (compare means, compare rate, or correlation). Qualitative approaches will be used to analyse data from Element 3. These may include individual de-identified quotes from interviews may be used to highlight the themes that emerge. Each element of data collection helps us evaluate the effectiveness of the HNP webapp

from a different perspective. No individuals will be identified and no specific comments will be attributed in any way to individuals who have participated in the focus groups.

What do I need to do in order to participate?

Please make sure that you understand the information in this Invitation Letter and be sure that you understand its contents before you consent to participate. If there is anything you do not understand, or you have any questions, please contact the Principal Investigator or research assistant. You can also go to <http://www.healthnumeracyproject.com/> for more information.

For more information you can contact the research lead for this project: Taras Gula at tgula@georgebrown.ca or the co-leader: Miroslav Lovric lovric@mcmaster.ca.

Thank you for considering this invitation.

Taras Gula

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CONSENT

[The consent will be filled out online within the HNP webapp.]

- I have read the information presented in the information letter about a study being conducted by Taras Gula of George Brown College and Miroslav Lovric of McMaster University.
- I have had the opportunity to ask questions about my involvement in this study and to receive additional details I requested.
- I understand that if I agree to participate in this study, I may withdraw from the study at any time or up until approximately **Dec. 17, 2021**].

Once you click on 'I have read and understood the consent process' the following options will be provided for you:

- I choose to participate in all 4 of the elements of the research study
- I choose not to participate in any of the 4 elements
- + I would like to choose the elements individually. Click only the boxes to the left of the element descriptors to indicate consent.
 - Element 1: tracking my usage of the HNP webapp.
 - Element 2: post usage survey
 - Element 3: interview
 - I consent to audio recording
 - Element 4: pre and post health numeracy task assessment

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If interview is selected but you do not wish to provide consent for audio recording a research assistant will contact you for other options.

