Full Application Form

Filter Questions

1 Is your study considered research as defined in the guidance icon information? ◉ Yes ○ No

2 Does your study require external ethical review by either the Health Research Authority (which includes the NHS REC and Social Care REC) or the Ministry of Defence REC?
See guidance icon for further information on the HRA and MOD REC ethical review remit.

○ Yes
◉ No

Data Collection

3 Select one category from the list below (categories are defined in the guidance icon).

My study involves:

◉ a) Only primary data collection involving human subjects.
○ b) Only analysis of pre-existing human subject data which is not in the public domain and contains identifiable personal data (see guidance icon for definition)
○ c) Both primary data collection involving human subjects and analysis of pre-existing human subject data which is not in the public domain and contains identifiable personal data (see guidance icon for definition)
○ d) Data collection not involving any of the above but presenting sensitive issues
○ e) None of the above

4 Select all that apply in order to determine the risk level of your application.

- [x] a) Does the research involve participants who are particularly vulnerable or unable to give informed consent or in a dependent position?
- [ ] b) Will participants be asked to take part in the study without their consent or knowledge at the time or will deception of any sort be involved?
- [ ] c) Is there a risk that the research topic might lead to disclosures from the participant concerning their involvement in illegal activities or other activities that represent a threat to themselves or others?
- [ ] d) Could the study induce psychological stress or anxiety, or produce humiliation or cause harm or negative consequences beyond the risks encountered in a participant's usual everyday life?
- [ ] e) Is there a foreseeable likelihood that a participant's capacity to give fully informed consent may diminish throughout the course of the project? i.e. early stage dementia, brain injury etc.
- [ ] f) Does the study involve imaging techniques such as MRI scans or ultrasound?
- [ ] g) Does the study involve sources of non-ionising radiation (e.g. lasers)?
- [ ] h) Does the study involve physically invansive procedures, use of bodily materials, or DNA/RNA analysis? (including collection of human tissue)

You should only select the statement below if you have not selected any of the above risks. Your application will be invalid if you select the below statement in addition to any of the above risks.

- [ ] I have answered no to all questions in the risk checklist above and I believe that my research is low risk

Based on your answers to the above filter questions your research has been categorised as High Risk and upon submission will be subject to review at the next relevant Research Ethics Subcommittee meeting. You can now access an overview of the available sections of the application by selecting the navigate tile in the action panel on the left. Alternatively you can proceed through each section of the application by selecting the next tile.

Meeting dates and submission deadlines can be found here

Section A: General Information

A Applicant Details

Title	First Name	Surname
Dr	[redacted]	

Department: Education, Communication and Society

KCL Email: [redacted]

A2 Applicant Status

Staff

A3 Applicant Role

Co-investigator

A4 What is your role in the project?

Co-investigator

A5 Is King's College London the research sponsor? ◉ Yes ○ No

A6 Who is the Principal Investigator?

Title	First Name	Surname
Dr	[redacted]	

Organisation: King's College London

Email: [redacted]

A7 Faculty/Institute/School

Please refer to the information icon if you are unsure of your Faculty/Institute/School.

Social Science and Public Policy

A9 Job Title

[redacted]

A13

Title	First Name	Surname
Dr	[redacted]	

Organisation: King's College London

Email: [redacted]

What is the role of this investigator?

Co-investigator

Section B: Project Information

B1 Project Title

STEM voices from the margins: The value and relevance of STEM skills and knowledge according to young people in non-mainstream education

B2 Proposed start date: 01/07/2019

B3 Expected completion date: 31/12/2019

B4 Is this a funded project?

- (•) Yes
- ( ) No

B4a How is the project being funded?

KCL funded

B5 What are the aims and objectives of the project?

Provide the academic/scientific justification of the project as well as detailing and explaining the principal research question, objectives and hypotheses to be tested.
Please Note: Applications to the BDM and PNM RESC should include a full list of references/citations to back up the academic/scientific justification of the project.

Students educated in non-mainstream settings (i.e. special schools, pupil referral units and hospital schools) face challenges in entering employment and, in particular, are under-represented in Science, Technology, Engineering and Mathematics (STEM) careers (CaSE, 2014). Whilst students from non-mainstream schools underachieve on external STEM assessment in comparisons to their peers in mainstream schools (DfE, 2018) they may possess STEM skills and knowledge, but in forms that are currently undervalued by teachers and the educational system. Over half of highly-skilled STEM positions in the UK are filled by non-graduates (Nuffield Foundation, 2018) and there is currently a lack of workers with appropriate technical skills (National Audit Office, 2018).

Research has suggested a shift towards technical STEM education may support students with additional learning needs to engage with STEM subjects (Plasman and Gottfried, 2018). Imminent reforms to qualifications in England intend to redress the historical bias against technical education (Hinds, 2018). Given the proposed reforms, we argue that now is an appropriate time to listen to the voices of learners in non-mainstream education about the STEM education they receive. Our broader aim is to reconceptualise the nature of STEM education so that both learners and teachers in non-mainstream environments appreciate its value for future citizenship and employment.

This pilot study will examine how students in non-mainstream education position themselves in relation to STEM education and the value they place, and perceive others place, on STEM knowledge and skills. We will interview 15 students in three non-mainstream schools to understand the aspects of STEM education that they perceive are relevant and valuable to their lives and their careers.

This research study asks:
1) What aspects of STEM knowledge and skills do students in non-mainstream settings believe are personally valuable and valuable for their futures?
2) How do students perceive that the knowledge and skills they possess are valued in STEM lessons in their schools?

CaSE (2014). Improving Diversity in STEM. A report by the Campaign for Science and Engineering (CaSE). London. Retrieved from http://www.sciencecampaign.org.uk/resource/ImprovingDiversityinSTEM2014.html
DfE (2018). Creating opportunity for all. Our vision for alternative provision. London: DfE. Retrieved November 5 2018 from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/713665/Creating_opportunity_for_all_-_AP_roadmap.pdf
National Audit Office. (2018). Delivering STEM (science, technology, engineering and mathematics) skills for the economy. London: National Audit Office.
Smith, E & White, P. (2018). The employment trajectories of Science Technology Engineering and Mathematics graduates. London: Nuffield Foundation.https://www.nuffieldfoundation.org/employment-trajectories-stem-graduates
Plasman, J. S., and Gottfried, M. A. (2018). Applied STEM Coursework, High School Dropout Rates, and Students With Learning Disabilities. Educational Policy, 32(5), 664–696.

B6 Where will the research be conducted? i.e in a facility within the college, in a private organisation, in a public place etc

The research will be conducted in 3 non-mainstream schools. The interviews with students will take place in a quiet space within the school, for example, an unused classroom.

B7 If outside of the UK, please state the country/countries in which data collection is expected to occur.

N/A

B8 Selection of methodology from list: (select each that applies)

- [ ] Questionnaires
- [x] Semi-structured interviews
- [ ] Unstructured Interviews
- [ ] Focus Groups
- [ ] Observation
- [ ] Clinical Procedures or Interventions
- [ ] Non-clinical Procedures or Interventions
- [ ] Randomised Controlled Trial
- [ ] Oral history
- [ ] Analysis of pre-existing data from human participants
- [ ] Audio/video recording or photography in a public place
- [x] Audio/video recording or photography in a private place
- [ ] Administration of food substances
- [ ] Behavioural/Cognitive Testing
- [ ] Other

If you are using any standardised methods for any of the above selected methodologies, please provide an overview of any standardised documentation to be used. Please provide full names and references where appropriate.
Please note you are not required to submit any standardised forms as supporting documents.

B9 Give a summary of the project methodology.

We will interview students in years 10 and 11 to capture young people's perceptions of STEM skills and knowledge at a point when they are beginning to consider career choices. Potential participants will be proposed by their teachers by their match with five criteria:
a) Are currently educated in a non-mainstream setting;
b) Will not be distressed by the interview process;
c) Can give informed consent;
d) Can access the instrument;
e) Are aged 14-16-years-old.

Written consent from gatekeepers, the headteachers of the schools, will be obtained before teachers and students are approached. Informed consent will be sought from students and their parents.

The interviews will take place in a quiet location in the participants' schools during a normal teaching day. The interviews will be arranged so that they have minimal impact on students' learning, for example, by arranging them during break or lunch time. The interviews will be video recorded to ensure all forms of communication, for example communication in sign language, can be recorded.

In the first section of the interview, the participants will be shown a set of cards labelled with a picture and some text that describe learning activities, for example, being able to fix a computer / knowing how to code. The participants will be asked to sort the cards into various categories, for example: Things that I am good at / Things that I am not good at.

The second part of the interview will involve a series of questions about students views' on their futures and the role of STEM education in supporting their goals.

The data will be iteratively analysed by the research team to identify any issues participants encounter in understanding the research instrument, and secondly, the patterns in the responses and how these pattern vary across the different student groups.

If the summary of your methodology would be supported by a flowchart please attach this here (an editable flowchart can be found

via the link in the guidance icon)

B10 I confirm that the researcher who will be administering all tests and/or procedures is competent in the methods.

- (•) Yes
- ( ) No

Section C(I): Participants

C1 Detail your projected number of participants and provide justification for this sample size.

Fifteen learners will be invited to participate, five from each of the three schools. The trial is a pilot of a novel methodology for eliciting the views of students with different learning needs, hence a small sample size is proposed to develop an understanding of the nuances of responses to the pilot instrument. For the pilot to be viable we aim to recruit at least three students from each school.

In order to mitigate any sense of a pressure to participate, the aims of the project will be clearly described to potential participants. It will be emphasised that participation is entirely voluntary and that potential participants can withdraw at any time during the interview and at any point up till the 31st of October. Participants will be approached first by their parents to prevent any felt pressure to be involved with the research (see C4).

C2a What are the Inclusion Criteria? Where appropriate explain how you will screen your participants. (the selection criteria should be clearly defined for multiple participant groups)

The following inclusion criteria will be given to teachers to guide the screening of participants:
a) Students who are educated in non-mainstream schools. Non-mainstream schools are taken to be special schools and alternative provision sites (including hospital schools and pupil referral units).
b) Students who are aged 14-16-years-old at the time of the study.
c) Students who are capable of accessing the text in the research tool as attached in the documents section, labelled sample interview prompts.
d) Students who are capable of giving informed consent.
e) Students who teachers believe will not be distressed by the procedure.

C2b What are the Exclusion Criteria? Where appropriate explain how you will screen your participants. (the selection criteria should be clearly defined for multiple participant groups)

The following exclusion criteria will be given to gate keepers when selecting potential participants:
The following students should be excluded from the study:
a) Students who are likely to become distressed by a 30 minute video interview with a researcher.
b) Students who will struggle to understand the prompts or express their views in the interview format.
c) Students who are not capable of giving informed consent.

C3 What are the upper and lower age limits? Provide justification for these where appropriate.

Students aged between 14-16-years-old will be asked to participate. Students in this age range are likely to be receiving careers advice and will be beginning to make decisions about future employment or study.

C4 How will potential participants be identified and approached?

STEM teachers at the chosen schools will be asked to select students of the appropriate ages who meet the inclusion criteria described above. Once teachers have identified potential participants, the researchers will ask their teachers to approach the parents of the students by sending them an information sheet describing the research and a consent form. Parents will be encouraged to discuss participation with their children and, only once parental consent is received, will the researchers ask parents to share information sheets and consent forms with their children. The potential participants will be given at least a week to consider their response. If parents and students indicate an interest in participating, and parents have returned a completed consent form, a researcher will arrange a suitable time to meet a student at their school and describe the study and gain a record of informed consent.

If a potential participant chooses not to participate, we will ask teachers at the selected schools to suggest an additional student who meets the inclusion criteria and repeat the process above to gain the informed consent of parents and students.

It is important that gatekeepers (teachers) are involved in the selection of participants so that participants who can give informed consent are selected. This requirement means that the identity of participants will be known to the teachers. Therefore, the gatekeeper letter requests that teachers do not share the identity of participating students.

C5 If any participants are under 16 will you seek additional consent from parents or carers? (•) Yes ( ) No ( ) N/A

If yes, ensure that your application is accompanied by an additional Information Sheet & Consent Form for parents/carers.

C6 Please specify any incentives being offered and a justification for their use.

N/A

Informed Consent

C7 Will informed consent be sought? (•) Yes ( ) No

C7a How will this be sought? Who will take consent and how will it be recorded?
Note: Justification must be provided for not gaining written consent

Students will be talked through the consent form by a researcher and asked to provide a written record of consent. Consent will also be sought from the students' parents/carers. Teachers will be asked to send an information and consent form to the students' parents/carers.

C7b How long will participants be given to decide if they wish to participate?

Teachers will give information sheets and consent forms to potential participants and their parents/carers. Once parental consent has been received, consent be sought from students. The participants and parents/carers will be given at least a week to make their decision.

C8 Could your past or present relationship with potential participants give rise to a perceived pressure to participate? If so, what steps will you take to mitigate this issue?

No

C9 Detail the process by which participants may withdraw from the research both during the research and after it has been completed. A final withdrawal date should also be provided, after which participants may no longer withdraw their data from the study.

Participants and their parents/carers will be informed of their right to withdraw from the research during and after its completion. This right will be reiterated at the start of the interview process. A procedure for withdrawing consent, by contacting an email address on the information sheet, will be described at the start of the interview and described on the information sheet. A final withdrawal date will be included on the information sheet.

Section D: High Risk Research

D1a Risk Identified: Participants who are particularly vulnerable or unable to give informed consent or in a dependent position. Please fully explain how the risk will be mitigated.

Ethical research with participants with learning difficulties should a) contribute to the lives of the participants; b) bring about change; c) include the views of learners on the research process and d) avoid harm (Lewis & Porter, 2004). This research intends to share the views of learners in marginalised settings (special schools, hospital schools and pupil referral units) on studying STEM subjects with the aim of encouraging greater participation in STEM careers from learners from these settings and so has the potential to bring about change that contributes to the lives of the participants.

Given, the potentially greater challenges of securing informed consent from those with learning difficulties, gatekeepers at the primary (parents) and secondary (headteacher and teachers) level will be approached (Lewis, 2002). The views of gatekeepers (in this case, the teachers) on who should participate will be sought (Lewis & Porter, 2004). In order to give informed consent, the participants and gatekeepers will be informed of a) the nature of the study; b) their right to withdraw; c) their role in the research and d) potential outcomes of the research (Lewis, 2002).

It is reported that obtaining informed consent from young people with learning difficulties can be more challenging than for other participants and forms of consent may be more difficult to recognise (Lewis, 2002). An inclusion criterion for the study is that participants should be able to give informed consent. Participants' literacy will be assessed by discussions with their teachers and appropriate support to understand the information and consent forms will be given (Perry, 2004). Two versions of the consent form have been produced, with higher and lower demands of literacy. The researchers will work with teachers to ascertain whether the potential participants have understood the information and can give informed consent.

We will only proceed with the research if we obtain explicit written consent from participants and their parents. As recommended by Kellett and Nind (2001), we will be sensitive to participants' indications that they continue to assent to the research during the interview process. Care has been taken to ensure that information and consent forms for participants are understandable by participants – these documents will be checked by gatekeepers for their appropriateness for potential participants (Lewis & Porter, 2004).

The anonymity of the participants, schools, teachers and parents will be protected (Lewis, 2002). If verbatim quotations from the transcripts are used in publications, care will be taken to ensure participants cannot be identified from excerpts. Where still frames or video footage are used in publications and presentations, the participants features will be electronically masked to ensure their anonymity. If any video recordings with sound are used in presentations, audio distortion software will be used to protect participants' identities. Providing participants with feedback on the outcomes of research is seen as an ethical standard and we will ensure that participants are sent information on the findings of the study in an appropriate form if they request it (Lewis, 2002; Lewis & Porter, 2004)

Capturing video data will allow a range of different kinds of responses to be recorded. This approach ensures all participants' modes of communication will be accepted as data (Lewis, 2002). Ensuring that participants are able to validly communicate their views is an important ethical principle - the use of picture and cards, as used in this approach, is recommended to facilitate communication (Lewis & Porter, 2004) and minimises the literacy and oracy demand for participants.

D2 What are the potential risks and burdens to the participant?

The interviews are not expected to induce stress and anxiety in the participants. The questions focus on participants' perceptions of their own skill or knowledge and the STEM education they receive in school. The primary burden of the interview is the time the participant will give to participate in the session.

To mitigate any possible risk, the researchers conducting the interviews will use the distress protocol suggested by Drauckner and colleagues to define appropriate reactions in response to potential harm. If a participant indicates they are experiencing stress or displays behaviours that indicate stress (e.g. crying or self-harming behaviour) the interview will be terminated immediately. The researcher will express concern and direct the participant to an appropriate source of support, most likely their teacher.

Draucker, C. B., Martsolf, D. S., & Poole, C. (2009). Developing distress protocols for research on sensitive topics. Archives of Psychiatric Nursing, 23(5), 343-350.

D3 What are the potential benefits to the participant?

The interviews will allow the participants' voices to be heard and give them an opportunity to express their opinions on the skills and knowledge they value. It is hoped that the research will cause change to education in non-mainstream settings that supports more learners to pursue STEM careers.

D4 If you have guaranteed participant anonymity in the final report, confirm how this will be ensured.

Schools and participants will be identified by pseudonyms. Where verbatim quotation is used, care will be taken to ensure that the participants can not be identified from the responses. Where still frames or video footage are used in publications and presentations, the participants' features will be electronically masked to ensure their anonymity.

Section E(I): General Data Protection Regulation Requirements

E1 Does the project involve the collection and/or use of personally identifiable information?
Personally identifiable information is data that can be used to identify an individual, either directly or indirectly. This may include names, job titles, photos, videos, email addresses, usernames, IP addresses, DNA or one or more factors specific to the physical, genetic, mental, economic, cultural, or social identity of that person. See guidance icon for examples of personal data.

Please indicate which of the following applies:

- ○ The project involves the collection and/or use of personally identifiable information
- ◉ Personally identifiable information will only be obtained in order to contact potential participants. No further identifying information will be collected as part of the study.
- ○ No personally identifiable information will be collected and/or used for this project

E1b Please indicate which of the following applies:

- ◉ The personal data used for recruitment purposes will not be linked to the anonymous data collected from participants and will not be held for any longer than is necessary for the purposes of recruitment.
- ○ The identifiable information used for recruitment purposes will be linked to the data collected from the corresponding participant/s.

◉ I confirm that I understand that it is the responsibility of the researcher to ensure that all research data is appropriately handled and stored during and after the project in compliance with College guidelines:
KCL Research Data Management Guidelines

Section E(II) Data Handling, Protection and Storage

E5 Where will research data be stored during and after the study is completed?

The video data will be transferred to the KCL OneDrive system where it will be stored in a password protected area that is only accessible by the three researchers. The video files will be encrypted.

E7 How long will research data be stored for after the project is completed?
Guidance on data retention periods can be found in the King's Data Retention Schedule

The data will be stored for seven years after the end of the project.

E4 Research Dissemination: How will results be disseminated?

- ☐ Internal report (thesis)
- ☑ Journals
- ☑ Conference
- ☐ Other

E10a Will the anonymous data set shared with any third parties and/or be archived for further use? ◉ Yes ○ No

Provide further details on how the data will be shared and/or archived:

The audio of the video recordings will be shared with a transcription service. Care will be taken that sections of audio that could identify participants or their schools will be removed. The transcribers will be asked to sign KCL confidentiality agreements.

Section H: Insurance, Risks and Ethical Issues

H1 Does the project involve any of the Risk Assessment criteria outlined in the information icon guidance? ○ Yes ◉ No

H2 I confirm that I have read the exclusion criteria for the College's Clinical Trials and Research Projects Involving Human Subjects Insurance Policy, detailed in the guidance icon, and that:

- ◉ a) This project meets the inclusion criteria of the policy
- ○ b) This project falls under the exclusion criteria and I have gained approval from the Finance Department, as instructed in the guidance icon
- ○ c) This project falls under the exclusion criteria but approval has not been granted by the Finance Department

H3 I confirm that my travel insurance arrangements are as follows:

- ○ a) I will secure College travel insurance (see guidance icon for further details)
- ○ b) I will secure personal travel insurance
- ◉ c) I do not require travel insurance as I will conduct the research in my country of legal residence
- ○ d) I will not secure travel insurance

H4 I confirm that if Disclosure & Barring Service clearance is required for my study, this will be obtained prior to the commencement of data collection. ◉ Yes ○ No ○ N/A

H5 I confirm that the No Fault Compensation Scheme will be offered to all UK based participants. ◉ Yes ○ No ○ N/A

H6 Give the details of any other review body approvals or permissions obtained (including gatekeepers, other Ethics Committees, peer review, R&D permission).

H7 Give details of any other ethical issues which have not been addressed elsewhere in the application and explain how you will mitigate these risks.

Section I: Supporting Documents

I1 Participant Information Sheet

Documents

Type	Document Name	File Name	Version Date	Version	Size
Participant Information Sheet	information-sheet-template-participant-simplified	information-sheet-template-participant-simplified.docx	18/06/2019	2	55.3 KB
Participant Information Sheet	information-sheet-template-participant-highliteracy	information-sheet-template-participant-highliteracy.docx	18/06/2019	2	57.7 KB

Consent form (if applicable)

I2 Consent form

Documents

Type	Document Name	File Name	Version Date	Version	Size
Consent Form	consent-form-students simplified	consent-form-students simplified.docx	18/06/2019	2	63.4 KB
Consent Form	consent-form-students higher literacy	consent-form-students higher literacy.docx	18/06/2019	2	63.6 KB

Recruitment documents for parents/carers (if applicable)

I3 Information Sheet(s) and Consent Form(s) for parents-carers

Documents

Type	Document Name	File Name	Version Date	Version	Size
Other	information-sheet-template-parents	information-sheet-template-parents.docx	18/06/2019	2	55.3 KB
Other	consent-form-parents	consent-form-parents.docx	18/06/2019	2	64.0 KB

Questionnaires/Surveys (if applicable)

I4 Questionnaires/Surveys

Indicative questions, topic guides etc (if applicable)

I5 Indicative questions, topic guides etc

Documents

Type	Document Name	File Name	Version Date	Version	Size
Interview guide	Sample Interview Prompts	Sample Interview Prompts.docx	11/04/2019	2	2.2 MB

Evidence of any other approvals or permissions (includes gatekeeper, R&D, other ethical approvals) (if applicable)

I6 Evidence of any other approvals or permissions (includes gatekeeper, R&D, other ethical approvals)

Approach letters to gatekeeper organisations (if applicable)

I7 Approach letters to gatekeeper organisations

Documents

Type	Document Name	File Name	Version Date	Version	Size
Permission/Approval Letter	Gatekeeper Letter	Gatekeeper Letter.docx	11/04/2019	1	17.1 KB

Advertisement document (email, poster, flyer etc) (if applicable)

I8 Advertisement document (email, poster, flyer etc)

Cover Letter (for amendments and modifications) (if applicable)

I9 Cover Letter (for amendments and modifications)

Other (if applicable)

I10 Other

Documents

Type	Document Name	File Name	Version Date	Version	Size
Other	Cover Letter	Cover Letter.docx	18/06/2019	1	20.9 KB

Researcher/Applicant

J1 Researcher/Applicant Signature

I undertake to abide by accepted ethical principles and appropriate code(s) of practice in carrying out this study. The information supplied above is to the best of my knowledge accurate. I have read the Application Guidelines and clearly understand my obligations and the rights of participants, particularly as regards obtaining valid consent. I understand that I must not commence research with human participants until I have received full approval from the ethics committee.

Please note that in order to authorise your application you must sign off using your KCL email address i.e. joe.bloggs@kcl.ac.uk and your KCL password.

Signed: This form was signed by [redacted]