

The SLICCs Programme at the University of Edinburgh

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Introduction

Universities recognise how useful real-world learning is in preparing students for their future lives and careers. Students are encouraged to engage in co-curricular activities, to secure holiday jobs, to travel abroad and to apply for internships. Although this learning is valuable, in New Zealand, most students do not get credit for what they do, nor is their real-world learning assessed or quality assured.

We wanted to discover a way to offer credit for advanced experiential learning. We needed a scalable solution that could be applied to a vast array of learning contexts and which had a robust assessment regime. We wanted a system that inspired students to become independent, reflective and active learners, researching a topic that interested them.

Dr Edward Elder has prepared this excellent case study about a solution developed in the University of Edinburgh that meets all our needs. I encourage you to read his work and think about how a similar system could be developed in your institution.

Prof Susan Geertshuis

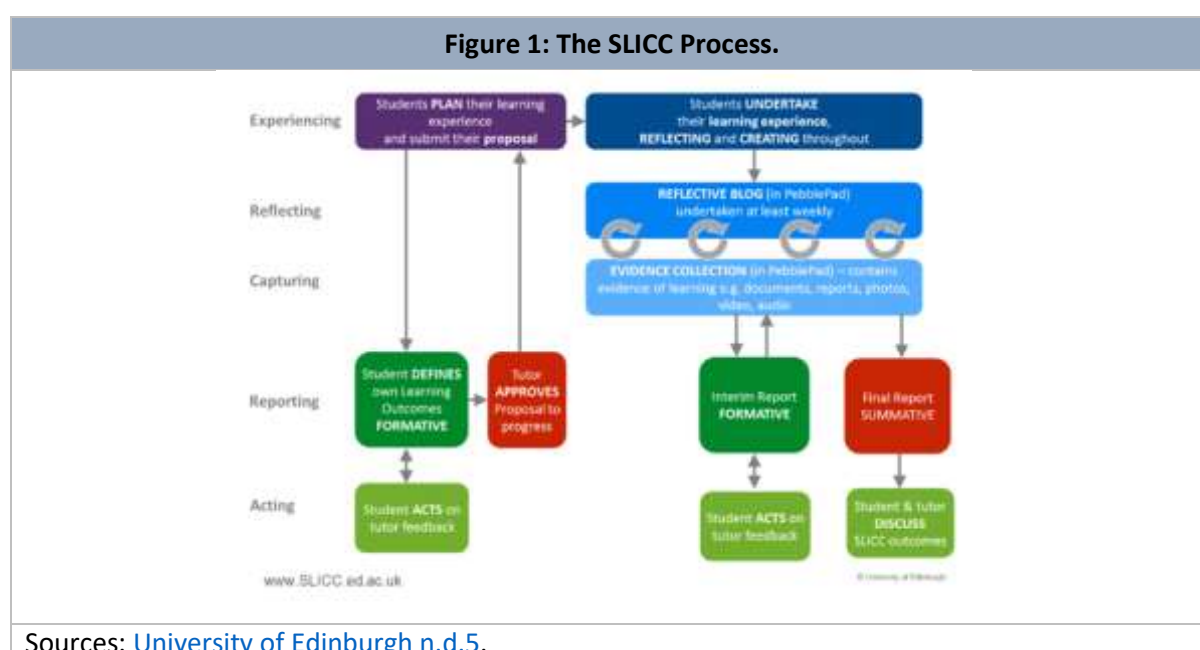
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What is a SLICC?

The University of Edinburgh has developed an online Student-Led, Individually-Created Courses (SLICCs), where students create their own project from beginning to end. This lets students “gain credit for self-initiated, independently-led and self-directed learning... largely undertaken independently of university supervision.” ([University of Edinburgh n.d.5](#)) The summer SLICC programme, which is where the SLICC framework was initially developed, is an elective type course available to first- and second-year students that take over their summer holidays (normally about five week long project – [PebblePad, 2017](#)). Here, they develop an e-portfolio reflecting on an experience of their choosing. These can include projects such as those seen in Table 1 below.

General Ideas	Specific examples from former students
<ul style="list-style-type: none"> • Placements or internships which aren't credit-bearing; • Employment that is not part of another course; • Volunteering roles; • Personal development opportunities; • Research activities; • A project in a lab; • An expedition. 	<ul style="list-style-type: none"> • Write a paper on living to 150; • Conducting local elections in remote parts of Nepal; • Teaching German to summer school students; • Learning a new programming language to create graphs of “biological relationships” for the Swiss Institute of Bioinformatics; • Hands-on personal development with teenagers in Denmark.
Sources: McCabe 2018 ; Riley 2016a ; McKenzie n.d. ; The University of Edinburgh n.d.5 ; University of Edinburgh Careers Service 2018 .	



Sources: [University of Edinburgh n.d.5](#).

With its introduction in 2015, the idea of SLICC is for students to identify some academic element to the experience they have chosen to undertake - often outside their own academic area ([McCabe 2017](#)) - and reflect it in an e-portfolio (through a provided framework), with a tutor providing academic feedback as they go through the process, the timeline of which is noted below:

Box 1: The SLICC Timeline

- *Application*: This process is dependent on the version of SLICCs the student is completing.
- *Proposal*: The student submits a proposal, which provides information about: the student's chosen learning experience; the aims of the experience; how the student will demonstrate the five learning outcomes through this experience; how the student will reflect on their experience as well as; a proposed timeline. After submission, the student is assigned a tutor, who will provide feedback, including typically changes needed before approval (see next page for more detail).
- *SLICC commences*: The student starts the experience, while updating their workbook with evidence and reflections continuously.
- *Interim Reflective Report*: Like a draft of the Final Reflective Report, the student submits this at a predetermined deadline. The tutor again reviews this and provides feedback for potential improvements and questions the student may want to ask themselves.
- *Final Reflective Report*: Following the same structure as the Interim Reflective Report, this is submitted at the conclusion of the experience with adjustments made. These include adjustments based on the tutor's feedback, further self-assessment as well as developments since the previous submission.

Sources: [University of Edinburgh n.d.8](#), also see [University of Edinburgh n.d.3](#)

Dr. Simon Riley is the academic lead for the SLICCs programme alongside co-lead Dr. Gavin McCabe. He notes that the SLICC also provides an "online reflexive experiential framework and assessment tool. So that means a course can take ownership of it. So, if a course wants to do some experiential learning with a portfolio... they just take hold of the SLICC framework and just use it." Dr. Riley himself has used the framework alongside an honours programme in reproductive biology, allowing students to reflect on their capstone project (Riley, 2019). As Dr. Riley notes:

“85 percent of [the students] are not going to carry on in academia. So when [they] go to that interview in some sort of management project or to a business, they’re going to say ‘you’ve done this interesting bioscience project in reproductive biology, how is it going to be useful to you in our company?’ [Because of the SLICC the student has] actually thought about it... They’ve thought about what those are. They’ve thought about what skills they’ve actually gained. They’ve reflected on it. They’ve written it down and they can articulate it.” (Riley, 2019)

Box 2: The SLICC Programme Leads



Simon Riley
Programme Lead

Student-Led, Individually Created Courses



Gavin McCabe
Programme Co-Lead

Student-Led, Individually Created Courses

How are SLICCs assessed?

While the university staff member who provides this feedback is called a ‘tutor’, they do not provide the same level of guidance as, say, a dissertation supervisor. As highlighted in Box 1, students receive feedback about their project at three main points: The Proposal, Interim Reflection Report and Final Reflection Report. This is because the project is supposed to be the student’s experience, and the goal is for the student to take ownership it ([University of Edinburgh n.d.10](#)). In fact, as Dr. Riley notes, with the summer SLICCs in particular:

“We make sure that our tutors know nothing about the project. That’s important because they don’t start to tinker and start to second line manage whatever the project is. So we’ve had engineers working with students from the Arts School, and visa-versa. And that’s really interesting.” (Riley, 2019)

More specifically, when it comes the proposal stage, the student receives feedback based on: how viable the project is; how realistic the timeframe is; how clear it is that the student has thought about how they will achieve the five learning outcomes through their proposed experience; if the student appears to “be adopting a reflective learning approach throughout their experience” and; whether the student appears to understand the importance of collecting evidence during the experience. The proposal is then *Approved*, *Approved with Caveats* or *Not Approved*, with the tutor providing information what needs to be addressed before proceeding ([University of Edinburgh n.d.6](#)).

Once the student starts their SLICC experience proper, they are evaluated based on how they meet the five learning outcomes of the SLICC, which students highlight by gathering evidence during their experience and by reflecting on their experience throughout, as well as in their interim and final reports. These learning outcomes, and what is expected of the students around each, is outlined below (see University of Edinburgh n.d.9).

Learning Outcome 1: Analysis - how the student has investigated and learnt about their topic

Students need to show through their evidence and report that they have actively developed an understanding of the topic they have chosen for their SLICC. This includes initially describing the experience of the SLICC, the topic they will investigate through that experience as well as why, and how they plan to develop further understanding of this topic throughout the experience. At the end, the graders will be looking for evidence that the student has reflected throughout the process on how

they initially planned to develop their understanding of the topic, the challenges they encountered and how they dealt with those, as well as how their understanding of the topic evolved over time.

Learning Outcome 2: Application - the skills and abilities needed to complete this investigation

Students need to show through their evidence and report that they were able to draw on and apply a range of skills and attributes as they engaged with their SLICC effectively. This also includes showing that they were able to identify where they needed to improve on the skills and attributes they already process and how they may have to adapt these, as well as where the student will need to develop new skills. In the end, the graders will be looking for evidence that the student has reflected on: the skills and attributes they initially thought they needed for their particular experience; the skills and attributes the student already had that could be useful and how they were utilised during the process and; additional skills and attributes the student discovered they needed as they went through their SLICC experience and how they developed these.

Learning Outcome 3: Skills - development of skills in a particular area

While students need to develop, apply and demonstrate a range of skills and attributes in Learning Outcome 2, they need to show through their evidence how they have used their SLICC experience to actively worked on one of four pre-set skill categories in particular for Learning Outcome 3. These skill-set categories are: “research and enquiry; personal and intellectual autonomy; communication [or]; personal effectiveness”. In the end, the graders will be looking for evidence that the student has highlighted a range of skills considered, utilised and developed within the category of skill they choose.

Learning Outcome 4: Mindset - working on a mindset

Similar to Learning Outcome 3, Learning Outcome 4 involves the student demonstrating that they have worked on one of three pre-set mindsets that is relevant to their SLICC as they investigate and learn about their chosen topic (Learning Outcome 1). This involves choosing one of the following mindsets – “enquiry and lifelong learning; aspiration and personal development [or]; outlook and engagement” – at the beginning of their SLICC journey and actively exploring it throughout. In the end, the graders will be looking for evidence that shows that the student recognises how their SLICC experience has “enhanced [their] understanding and awareness of [their] selected mindset.”

Learning Outcome 5: Evaluation - evaluating and reflecting on approach, learning and development

Students need to show through their evidence that they are able to reflect on as well as honestly and critically evaluate their approach, learning and development throughout their SLICC experience. This

includes initially outlining how they plan to reflect throughout the process as well as what they will gain from it. In the end, the graders will be looking for evidence that shows that the student has critically reflected on their approach, the learning and the development they achieved during the SLICC experience, as well as what implications they may have for the student in the future.

Providing evidence

The evidence students provide often include “media and artefacts” relating to the experience in question. Student’s explain why they think their evidence choices illustrates their learning during their experience. What counts as evidence is quite open ended, with the main criteria being that the student can justify why it counts as evidence. Examples of evidence from past SLICCs can be seen in Box 3 below.

Box 3: Examples of Evidence

- “Photos of a handwritten SLICC diary (they were in a remote area, without internet);
- Photos of the living and working conditions for students while carrying out their SLICC in Nepal;
- A photo of group learning;
- Sketches and photos of local sights and features in China;
- A photo of a prototype of a model robot created during a SLICC on Robotics based in Portugal;
- Language learning activity sketches from a SLICC based in Germany”

Sources: [University of Edinburgh n.d.2](#)

However, the students are prompted to an extent, as each part of the learning outcome has a series of about five to ten questions that helps leads them through it. If they provide answers to those questions they are on their way (Riley, 2019).

How these are graded

More broadly, the grade a student will receive around each of these five learning outcomes depends on the quality of the evidence they provide, and how it is outlined in their final report. This is done by evaluating the evidence around each learning outcome against three key criteria (see University of Edinburgh n.d.9):

- [Insight and understanding](#): How “perceptive, thought-provoking, in-depth and/or creative” the evidence shows the student is around the particular learning outcome.
- [Thinking](#): How “critical, analytical, reflective and well considered” the evidence shows the student is around the particular learning outcome.
- [Structure](#): How “focussed and precise” the evidence is, and how “logical, well-reasoned and clearly balanced” the “development of arguments” are shown by the student around the particular learning outcome.

So, for example, a higher A-grade (90-100) will be where students have been “exceptional” in all three of these areas in their reporting and evidence of all five of the learning outcomes. On the other hand, a C-grade (50-59) will be where they student meets the “clearly meets requirements for demonstrating the relevant learning outcome[s]”, but is not above the threshold for any of the 5 learning outcomes.

Spending from 90 minutes to 4 hours per student on evaluating all assessments (depending often on the experience of the tutor with the programme), the feedback tutors provide tends to highlight potential improvements that could be made, especially at the Interim Report more so than at the Final Report. As Dr. Riley notes, this is because it is at this stage that improvements can be made in the Final Report, while extensive feedback at the final Report stage is less useful (Riley, 2019). Thus, feedback around improvements include, for example; things to consider; things to expand on; aspects that the student may want to link to their blog or other evidence; further examples they may want to think about; how something may reflect the development of a certain quality or outcome (and potentially, an outcome other than the one the student thinks). The tutor also provides feedback on the strengths of the report, potentially to highlight what areas to replicate. Much of the feedback relating to the areas of potential improvement comes in the form of questions, rather than direct instructions – presumably to give the student ownership, but also due to the fact the tutor may not actually know the answer (see [University of Edinburgh n.d.3](#); [n.d.4](#)).

Once the Final Reflective Report is completed, students are required to grade themselves based on each of the learning outcomes separately against the criteria, along with explanation and justification for their grade. The idea here is for the student to be reflective, by separating themselves out from their Final Report and putting themselves into the position of the marker. Again, this is done to help them reflect on their own learning experience. The marker is unable to see the student’s self-assessment until they have completed marking the Final Report, allowing the student and marker “to

have constructive two-way communication about any similarities and differences in the assessment grades and the reasons for these.” ([University of Edinburgh n.d.3](#))

Students are also required to complete a course feedback survey to help provide feedback so the teaching staff can improve on the course for the following year ([University of Edinburgh n.d.1](#)). Dr. Riley notes how useful this feedback from students, as well as from tutors, has been:

“That has been incredibly important. That’s why it looks so polished, because we have spent a lot of time and effort trying to get all that right... If students get a bad SLICC experience, and particularly if staff get a bad SLICC experience, and it all goes horribly wrong, then it’s a very quick way to kill a very good innovation.” (Riley, 2019)

What do the students get out of doing a SLICC?

“Our education should not be just about the ‘end product’ (the exam papers, the coursework, the final mark), but the journey – the mistakes a student has made and what they have learnt along the way - where there is as much space and reward for risk-taking and self-reflection as for examination.” ([University of Edinburgh 2017](#))

The SLICCs programme gives students the opportunity to develop a range of capabilities which will allow them to better understand how their academic skills can be transferable to the workplace and utilised in life-long learning ([McCabe 2017](#)). Importantly, the SLICC will encourage independent and reflective learning, as well as encouraging students to take ownership of that learning, throughout their life and post-university careers.

By focusing on reflection, the programme concentrates more on providing students with the opportunity to better understand their own learning processes than on the testing of topic-specific knowledge, as seen in most traditional academic papers ([Riley 2016a](#)). Tobias, who did his SLICC in the summer of 2015, notes that students often try to learn what is necessary to get a good grade, rather than to learn skills for utilisation and personal growth in the future. He notes that, for example, students normally stress and cram for exams, but then forget everything once the exam is over. With the SLICC, Tobias notes that he did not care as much about the mark he would get. This is because he developed skills that he could apply for that point forward, such as organisation and personal leadership skills due to the independence of the SLICC. He notes these included the ability to not only reflect, but apply that reflection to future actions ([McKenzie n.d.](#)).

A SLICC also gives students the ability to articulate what they have learnt ([McCabe 2017](#)). This is done to promote the mindset which is: “considerate, thoughtful, analytical; honest – even when this is difficult or uncomfortable; rational and distanced (although it often deals with feelings and emotions, try to look at them dispassionately); able to relate experiences to wider contexts, other perspectives and theoretical frameworks.” ([University of Edinburgh n.d.7](#))

As noted in the SLICC guiding material, this process to reflect critically is something that needs to be developed over time. The guiding material highlights several models based around the idea that this development can be activated through the utilisation of a prescriptive cycle, which students are encouraged to choose from based on the context of their chosen experience ([University of Edinburgh n.d.7](#)).

Table 2: The 3 Cycles Outlined in the SLICC Programme		
The ERA Reflective Cycle	Driscoll's Reflective Cycle	Kolb's Experiential Learning Cycle
<p>"A new experience leads to reflection on that experience and action to improve the experience in future situations."</p>	<p>"To get the most out of reflection you need to strike the correct balance between learning from your mistakes and concentrating on positive experiences (avoiding spirals of defeat). The ability to do both of these is essential."</p>	<p>"Reflective observation allows the review of this experience which, in turn, leads to the emergence of new ideas and thoughts in an abstract way. The new ideas can then be tried out in active experimentation leading to new experiences, which completes the cycle."</p>
<p>Source: University of Edinburgh n.d.7</p>		

This highlights the importance of the three key stages of the SLICC process (Proposal, Interim and Final Report). Furthermore, because the process is based on reflection of the learning process, rather than about testing the acquisition of specific knowledge, the programme allows students to learn through mistakes. As noted by Leo, who completed a SLICC on learning a new programming language in the summer of 2017:

"When I produced my first code, it was criticized quite heavily by my supervisor. However, I focused more on the fact that someone was criticizing my work rather than the actual content of the critique. I later learned to separate myself from my work, and look at it from a third-person's point of view. When creating a product, it is crucial to consider different perspectives to guide the development of the product. My mistakes were not being classified as such until I looked at my work from a different angle. Asking for feedback became a routine part of my internship, which significantly improved my skills."
 ([University of Edinburgh Careers Service 2018](#))

Dr. Riley notes that problems allow the students the opportunity to reflect on what went wrong, the mistakes made, and learn from that for the future. In fact, Dr. Riley notes that writing up reflections of these those problems is normally an easier SLICC than when everything goes well ([Riley 2016a](#)).

What makes SLICCs different?

As Alec, who did a SLICC in the summer of 2015, notes, “The greatest value of the SLICC is that which outlasts the process itself: it enables you to learn how to learn.” ([University of Edinburgh n.d.1](#)) The point is to give students skills that are transferable and long lasting, rather than simply job specific. Furthermore, as noted by Dr. Riley, the SLICCs programme is designed to be inclusive; Any first- or second-year student can have the opportunity to take it. What the students can reflect on varies, with the difficulty of the actual projects being reflected on varying in difficulty ([Riley 2016a](#)). As one former SLICCs student noted, “a SLICC can be anything, which is the beauty of the course.” ([McCabe 2018](#)) Because the main goal of SLICCs are to reflect on the process, and focus on the development of skills than simply testing if they have accrued knowledge, the SLICC programme is more universal and adaptable to the individual student. As a result of this, the programme has an easier time scaling the programme to the number of students involved, which has been as high as 200. As Dr. Riley notes, you don’t have as much is the administrative stuff that comes from the regular course, such as course material, setting assignments, preparing lectures, organising lecturers, and the like. What the summer SLICCs in particular, it comes down to making sure there are enough tutors who can spend 2 to 4 hours on each students work over the programme period. And that is more easily scalable than everything else. This is why Dr. Riley notes the potential future of adding the SLICC framework into other areas as well. These included adding it to the programmes for students doing a year abroad and for students doing joint degrees, where students are in contexts where they would be able to get extra credit for reflection that gave them the ability to better understand and articulate what they gained from their experience and how it fits together. Dr. Riley also highlights the universities new programme called SACHA (Students as Change Agents):

“It’s groups of Edinburgh students... working with a local community partner on a UN sustainability development goal. Kind of like a wicked problem, that there’s no answer to. But there may be more of an answer locally. But you can’t mark a project [in a traditional way] because it might go horribly wrong. But that’s not to say you shouldn’t start it. So SASHA’s going to be with 30 students. But I want to scale that. I want to be able to take that up to the whole institution.” (Riley, 2019).

Given the success of the SLICCs programme at the University of Edinburgh, it appears as though the framework could be used for more innovative learning at in other academic institutions around the world as well.

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