TM470 Early Start

eSTEeM Final Report

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School of Computing and Communications, July 2025

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Contents

Executive Summary

Students on IT/computing degrees at the Open University (OU) complete a compulsory project at the end of their studies (TM470), yet some students face challenges completing the project due to difficulties with independent work. The prompt for this study was students' poor performance on TM470 if restarting the module, to potentially improve retention among this cohort.

The main aim of this report is to highlight student support for development of the study skills required for project development, as studies have shown that early tutor support and feedback can help improve student retention. A TM470 early start pilot was conducted examining viability of an early intervention approach and to determine opportunities for scalability. Candidates were identified using an inclusive selection mechanism that considered: multiple prior registrations, breaks in study, and requiring just TM470 to complete their degree.

Initial feedback was gathered via interview with tutors who engaged in the project, regarding their support for students facing difficulties during their project's early phases. In the following two years the research was extended to also gather student feedback, via interviews, providing greater insight into the effectiveness of the early start activities. Further comparisons were made of pass rates for those on the programme with those who were identified as potential candidates but either declined the opportunity or were not offered a place due to number limitations. By evaluating this final year module in the School of Computing and Communications it is hoped this will inform others in helping students achieve their degree.

Aims and scope of the project

Introduction

The prompt for this particular study was students' poor performance on TM470 if restarting the module. Students on the IT/computing named degree have a compulsory project to complete at the end of their studies (TM470), yet for some this is a major challenge due to the independent nature of the research, with relatively little taught content in the module. Studies have shown that informal feedback, via additional tutor support, can help improve student retention (Sharp, Wray and Maxwell, 2020). Tutor support is of particular importance when regarding student retention in distance learning (Arhin and Ekow Laryea, 2020).

The TM470 early start project relates to several other eSTEeM projects and was informed by research elsewhere. For example, the M140 early start (Calvert, 2018). As with the TM470 project, students on M140 had the opportunity to get ahead with study. The approach parallels TM470 as it offered a tutor supported, flexible start, and uses the actual module materials. However, as the M140 pilot had around 400 students offered the opportunity of a flexible early start, and just over two hundred taking up the offer, it was on a much bigger scale than TM470, and less targeted. The M140 project also benefitted from MSQ funding.

Additional research has revealed that certain students face difficulties when working on individual projects and preparing for research methodologies. While the primary focus of some studies centred on the pedagogy of teaching research methodologies (Edwards and Thatcher, 2004, and Healy, 2005), findings have highlighted the effectiveness of using a student-centred, tutor-

guided strategy. It is important to emphasise that the core concepts of support, which place the student at the centre of a tutor-led guided approach, are a critical component of the TM470 strategy applied here, as outlined in Figure 1.

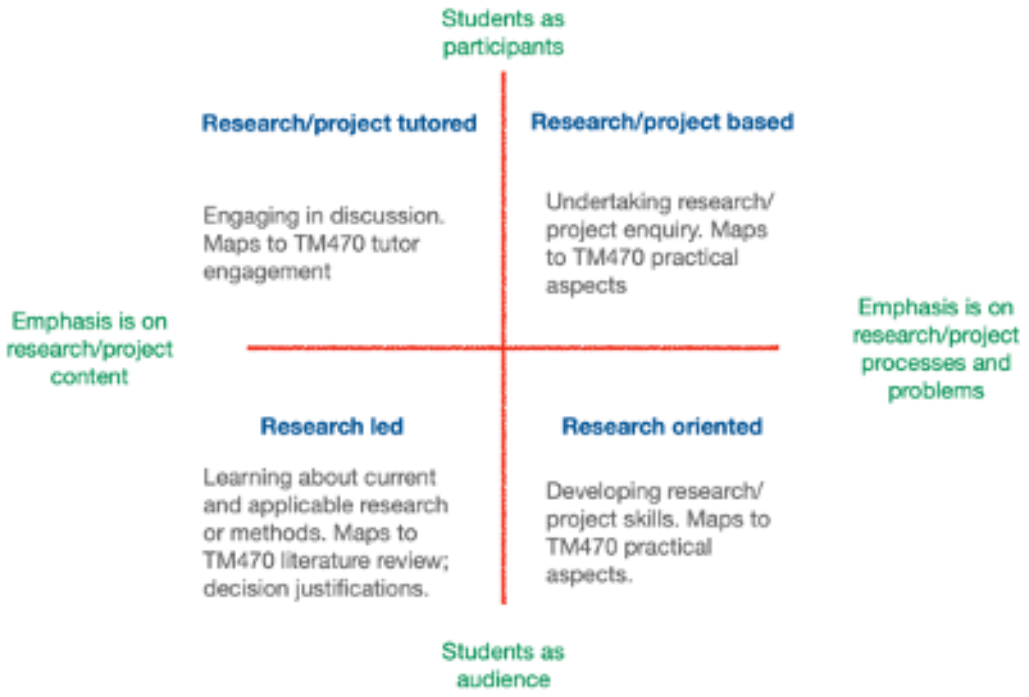

Figure 1: Classification of project inquiry separating participation modes; project content and project processes. Adapted from (Healy, 2005).

A similar project was conducted on MU123, with a flexible start option for students who registered early on the module (Calvert, 2019). Again, the programme was tutor supported, with the aim of increasing retention. On a further project, S294 students were allowed the opportunity to access the module website in advance of the official module start with forum support and some tutorials (Loughlin, Rietdorf and Butler, 2018). The focus was on helping students to consolidate their prior study and gain confidence before embarking on the main programme of study. This pilot specifically reviewed whether the funding was justified in terms

of student retention and improvement the student experience. From these projects the benefits of early start are evidence, yet the ongoing intervention on TM470 has different objectives which has enhanced the knowledgebase about early start interventions.

The overall objective was to review the early start initiative as a proposed solution for low pass rates for students who are at risk of not completing, or failing, the module due to a long study break.

Scope

A TM470 early start pilot, with a small amount of funding, was first initiated for the 20B presentation, with funding 12 students, from a cohort of about 600, to make an early start on TM470. Potential candidates were shortlisted by selecting students who had registered for TM470 at least once before, had a break in study, who were not studying any other module, and only needed TM470 to complete their degree. They were all deemed capable of passing but would probably struggle. All TM470 students have the opportunity to engage early with the module via a project preparation forum. The students involved in the project were also allocated to a tutor for early start where students could explore early ideas and reflect on feedback before module start. In effect they could ‘hit the ground running’ when the module commenced.

Aims

The main aim was to improve the experience of students who participate in early start, to potentially improve retention among this cohort and thereby improve the overall completion/ pass rate for the module. This was achieved

via comparison of pass rates, comparing those on the early start programme with those who were identified as candidates but either declined the opportunity or could not be offered the opportunity on the small-scale project.

Activities

Approach

The overall approach of the project was to observe the current practice of supporting TM470 students and then plan and develop a new support strategy for those considered at risk of failing the module. As it was not possible to support all students who might benefit from early start support, it was deemed important to evaluate the outcomes of the early start strategy to determine its effectiveness.

Activities

It should also detail what the the planned activities of the project were. What changes did you have to make to your plan, aims, project activities, etc, and why, e.g., technical problems, difficulties in involving users/stakeholders, etc?

There were three main phases of research, as detailed below:

Phase 1: Analytics data: July 2021 to December 2021

The first phase was essential for initial diagnostics, and planning of the early start project. A small set of TM470 students were highlighted as likely to benefit from intervention via direct support from a module tutor prior to module start.

Collection of analytics data on the target student performance commenced during the 20B module presentation, from July to Aug 2021. This helped to establish how likely the early start students were to pass the module, when compared to the main cohort.

In November 2021, the project then progressed to identification of a further sub-set of 21B students to include in the research. At this stage, the interview questions for 21B cohort were consolidated. As the main part of the research was about to commence, it was also necessary to submit an SRPP application (December 2021).

Analysis of analytics data from the 21B students commenced in July 2021 and was completed by January 2022.

Phase 2: Interview data, TM470 22B presentation

In November 2021 , the project was progressed via recruitment of further students from the 22B presentation.

The interview questions from 2021 were reviewed and refined and initial interviews took place with 22B students in December 2022.

Analysis of 22B interview data commenced in May 2022 and ran through to December 2022.

Phase 3: Dissemination and write-up milestones

For the final phase, findings were disseminated via an eSTEeM conference presentation in April 2022. This was an interim report on findings, mainly from the 20B findings, followed by a further eSTEeM conference presentation in April 2023 where the complete set of findings was presented. The final dissemination opportunity was at the Horizons in STEM conference in June 2024.

Research tools

Collection and analysis of data for 2020 was a small pilot for early start.

In 2021 twelve students engaged with the early start project from a cohort of about 700 students, so again a very small sample.

Further funding was secured to continue the project in 2022, and in total 24 students engaged with the early start project from a cohort of about 900 students.

There were three main sources of data:

- Analytics data on student performance from three presentations of TM470; February 2020, February 2021 and February 2022.
- Student interviews on motivations and reasons for early start. These included entry interviews in 2022.
- Feedback from ALs involved in early start 2021 and 2022.

Findings

Analytics

2020B presentation of TM470– pilot study

For the 20B TM470 early start pilot, 12 students were supported, 2 students for each of 6 tutors. Initial results for the early start intervention were promising. The pass rate was 58% for early start, as shown in Figure 2, which compared with a module pass rate of 72.4% for the cohort overall.

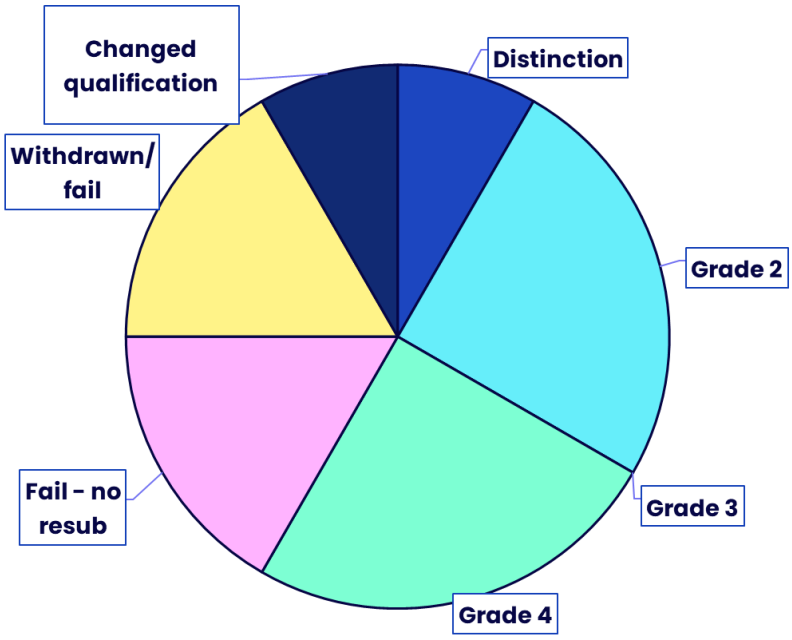

Figure 2: 20B results

Results were positive overall so, as the pilot study was very small, funding was requested to repeat the early start for the following presentation.

2021B presentation – small student sample

For the 21B presentation, a small amount of funding was made available to continue the project. Again, 12 students were supported, via 6 tutors. For this cohort, the findings were supplemented with an analysis of predicted pass rates for the early start group, compared to those in the main cohort.

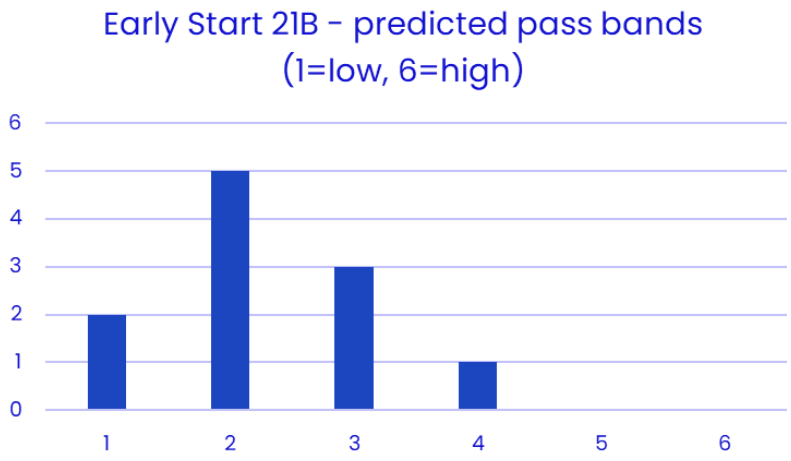

Figure 3: Early start students 21B predicted pass bands

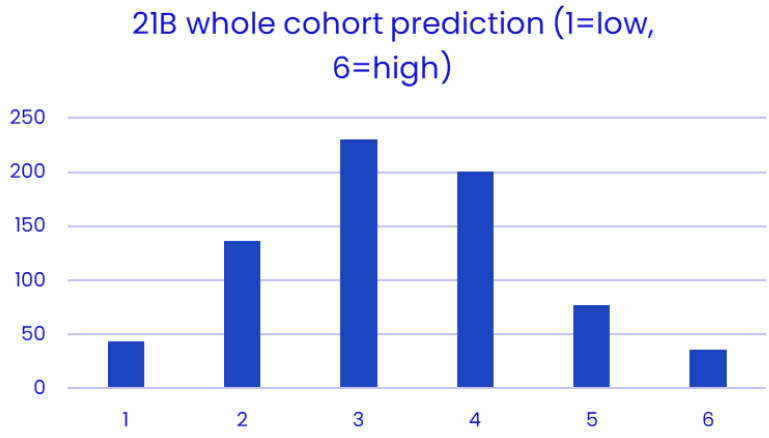

Figure 4: 21B main cohort predicted results

The students' predicted pass rates, prior to module start, were grouped into 6 bands, ranging from 1-6. The students in the bands to the left of Figures 3 and 4 are very unlikely to pass, and more likely to pass on the right. The figures show that early start students pass predictions are predominantly to the left in Figure 3 which indicated low pass rate predictions across the cohort. In contrast, the main cohort of students had more of a spread of pass rate predictions, as shown in Figure 4, so a higher percentage of these students were deemed likely to pass.

The pass rate was 50% for early start students, as shown in the breakdown in Figure 5. This compared with a module pass rate of 65.9% for the cohort overall but, as already noted, the early start students were deemed less likely to pass when analysing their study backgrounds.

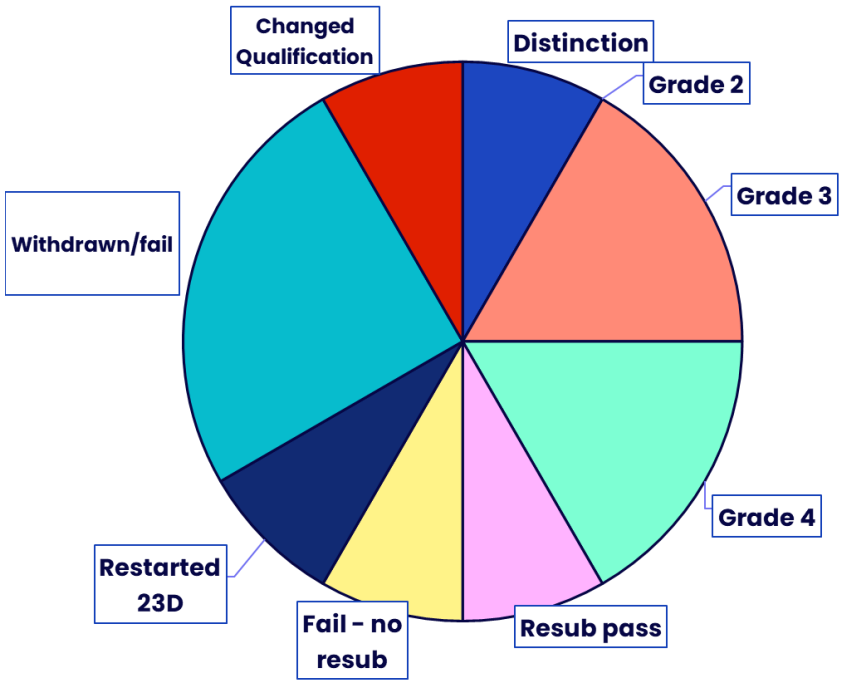

Figure 5: 21B results early start

The findings were again encouraging, so in order to gather further insight on how effective the early start interventions were, a control group was also analysed.

The control group comprised of students who were deemed eligible for early start intervention, but funding restrictions meant they were not offered support. Their study backgrounds were therefore comparable to those offered early start support. As can be seen in Figure 6, the control group achieved a pass rate of 25%, so significantly lower than the supported group.

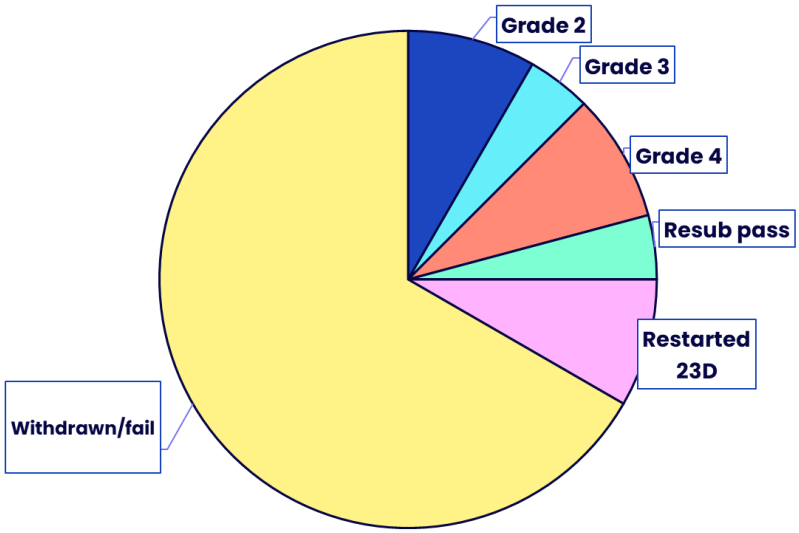

Figure 6: 21B results control group

As the student numbers in the supported group and control group were relatively small, it was decided to extend the research if funding allowed.

2022B presentation – larger student sample

Further funding was sought to extend the project, and a slightly larger target group was recruited, comprising 25 students, and 12 tutors. It was possible to

engage in a more in-depth study, with a bigger cohort of students and tutors. This phase also included interviews to gain further insights from students' and tutors' perspectives.

For this cohort, the pass rate was 56% for early start students, as shown in Figure 7, which compared with a module pass rate of 65.9% for the cohort overall.

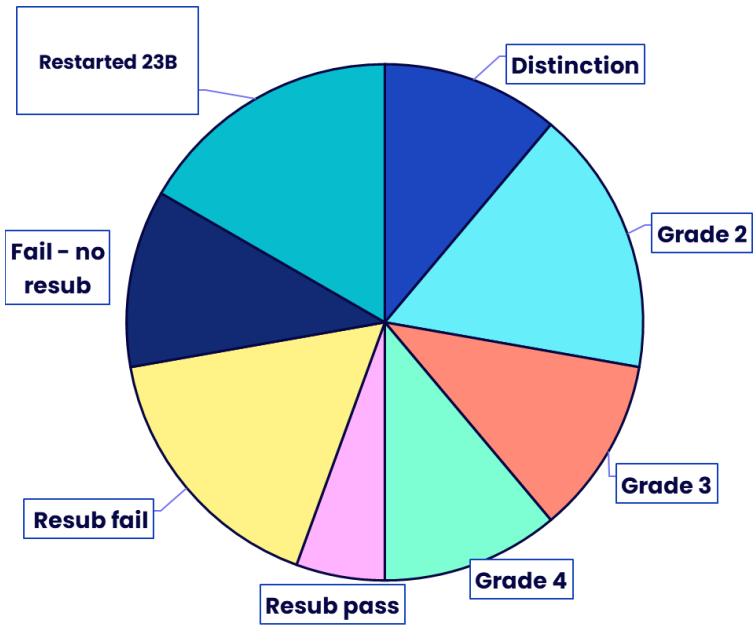

Figure 7: 22B results early start

Interviews

Interviews with students and tutors took place in 2022 and the participants' information sheet, consent form and interview questions can be found in Appendix A.

Student perspectives

One student noted the advantage of being slight ahead of schedule, while admitting that other commitments can impact on study:

> *You've got that buffer throughout, particularly if you've recently had to stop like me, because you've got a busy life outside.*

This student was invited to take part in the early start project after a break in study. They suggested a clear benefit in being guided back into study, particularly as they were then in a better position to juggle study alongside personal commitments.

The following student also noted the advantage of starting the project slightly ahead of schedule.

> *Take advantage of a head start. Here we are in November, December. Start now!*

The capstone project requires a very different study approach to previous undergraduate module that student encounter, so additional time is valuable for developing new study skills.

A further student appreciated the opportunity for a fresh start:

> *I was keen to do it again. Because obviously, I get my degree finished on (TM)470. Obviously, that means a lot to me, otherwise I wouldn't have started it 11 years ago.*

The student in this instance has taken many years to complete their degree, with multiple attempts at TM470, their final module on the degree pathway.

Tutor perspectives

Twelve tutors provided feedback from the 22B early start initiative. Support was evident from the tutor interview responses:

> *I would say both students benefitted from having early access to their tutor, although their particular circumstances were quite different: the first student was struggling to have a 'good' project idea, whereas the second student had faced family issues last year.*

The tutor in this instance highlighted the importance of individualised support, as student needs were quite different for the two students supported. The importance of individual support cannot be underestimated, especially for those students facing possible barriers when commencing their projects.

A further tutor noted how helping students with an early start could help ensure that they stay on track for the module:

> *In both cases the early communication with the tutor facilitates an early engagement and an early start, which allows for some issues to crop up but still meet the deadlines for submitting coursework.*

Students are very likely to meet with issues that can hinder their studies but the early start initiative can help to minimise impact and thus more likely that students will manage to complete the module, even if they struggle with other commitments.

However, it should be noted that the early start students did not all manage to maintain the early enthusiasm for studying the project module:

> *The initial response was very positive, but both are now behind where I would hope at this point, but hopefully ready to move forward.*

The tutor remains optimistic that the students will succeed, especially given that they both were in regular contact with the tutor when first allocated.

Conclusions

The early start findings have demonstrated the positive effect of enhanced support for those students who have struggled to complete TM470, and therefore their degree. The project team hope to be in a position to expand the early start support to a greater number of students.

The findings have been shared with ALs involved in the project, along with the TM470 module team. The project and its findings have also been shared with the SST lead in C&C in order to further inform the support staff on the positive aspects of the project.

Impact

a) Student experience

The project has helped improve the student experiences as early start on TM470 can help struggling students to successfully complete their final project and, therefore, their degree. This represents a significant achievement, representing the culmination of their hard work throughout their degree. The completion of the final project is often seen as a testament to the skills and knowledge acquired throughout their course of study, many of which are transferrable across to the workplace. The project provides an insight into proactive support methods that can be developed to support those students not directly involved in the small-scall research.

- Teaching

Improving the overall completion rate and pass rate for the module is beneficial for both students and the OU. Higher pass rates indicate that students are more effectively meeting the course requirements. This improvement can be linked to additional early support, and regular feedback on the module. How have you affected the practice of both yourself and others within the OU?

- What has been the impact of your project outside the OU?

- Strategic change and learning design

Retention rates are a vital measure of student success and institutional effectiveness. Students who are well supported and satisfied with their

educational experiences are more likely to continue their studies and complete their degree. Initiatives aimed at increasing retention, such as the early start programme, can help foster a supportive learning environment.

b) Recommendations

Increasing the knowledge base of early start interventions is helpful in identifying and supporting students who may be at risk of failing their capstone project. By investing in such early interventions, educational institutions can proactively address challenges before they become significant obstacles, thereby supporting student success and improving overall educational outcomes.

What would be beneficial would be to offer early start to a wider group of students. There are plans to change the support offered, for example by offering pre-module forum and live-session support for a larger group of students, with the option for students to request a 1-1 support session if required. A difficultly with this approach is how to invite taget students without demoralising them, i.e. ensure the invitation empahsises the positives of early start.

Dissemination

Deliverables

Please provide a list of any deliverables that will be of value beyond the life of the project such as websites/wikis (URL), publications (ORO link/pdf), papers (ORO link/pdf), etc.

The project team presented this project at the 2023 eSTEeM conference, published on ORO at OU Master PowerPoint Template .

The project findings were also disseminated at Horizons in STEM 2024, https://ukstemconference.com/wp-content/uploads/2024/06/horizons-in-stem-2024-conference-proceedings-v2.pdf (p.104) .

Figures and tables

Figure 1: Classification of project inquiry separating participation modes; project content and project processes. Adapted from (Healy, 2005).

Figure 2: 20B results

Figure 3: Early start students 21B predicted pass bands

Figure 4: 21B main cohort predicted results

Figure 5: 21B results early start

Figure 6: 21B results control group

Figure 7: 22B results early start

References

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University approval processes

If your project required specific approval from university committees, please provide the appropriate information below. This is a necessary requirement for future publication of outputs from your project.

- SRPP/SSPP – Approval from the Student Research Project Panel/Staff Survey Project Panel was obtained according to the Open University's code of practice and procedures before embarking on this project. Application number **2022/2122**.
- Ethical review – An ethical review was obtained according to the Open University's code of practice and procedures before embarking on this project. Reference number **HREC /4277/Gardner**.
- Data Protection Impact Assessment/Compliance Check – A Data Protection Impact Assessment/Compliance Check was obtained according to the Open University's code of practice and procedures before embarking on this project. IGLO contacted (Feb 2022).