Glasgow Colleges' Regional Board

Performance and Resources Committee Meeting

Date of Meeting	Wednesday 7 March, 2018
Paper Title	Update on the development of a regional approach to student data management
Agenda Item	8
Paper Number	PRC4-D
Responsible Officer	Robin Ashton, GCRB Executive Director
Recommended Status	Disclosable
Action	For noting

1. Purpose

1.1 To provide members of the Committee with a further update on the development of a regional approach to student data management.

2. Recommendations

2.1 The Committee is invited to:

- **note** this update report and provide feedback on the attached development options paper attached as Annex A; and
- **request** a further update at the next meeting of the Committee.

3. Update on the development of a regional approach to student data management

3.1 Members will recall that at their December Committee meeting, a report relating to the re-procurement of college student data systems was considered. In essence, this highlighted to Committee members the potential opportunities afforded by the re-procurement exercise to significantly progress a number of regional strategic goals relating to effective and successful learner journeys.

3.2 Given the potential strategic significance of this development, the Committee requested a further update at the next meeting of the Committee.

3.3 Since the last Committee meeting, a number of further discussions have taken place to consider student data development options. These have been supported by the Regional Lead for Student Data, Universities and Colleges Shared Services support and the GCRB Executive Director. These have included discussions with college staff across a range of operational levels and service areas (including college Principals), Student Association

officers from across the region, and Scottish Funding Council and Scottish Government officials.

3.4 These discussions have resulted in the development of the options paper attached as Annex A. Members are asked to note and provide feedback on the options paper to inform ongoing discussions

3.5 A formal meeting of the regional Chairs, Principals and Executive Director Group had been arranged for March 1 to consider the options presented. However, due to adverse weather conditions, the meeting had to be rescheduled to later in March and therefore, at the time of writing, no formal consensus or decision has yet been reached with regards the options presented.

3.6 A further update on the further development of a regional approach to student data will therefore be provided at the next meeting of the Committee.

4. Assessment of risks and legal, resource and strategic implications

4.1 The paper attached as Annex A includes an assessment of related risks, and legal, resource and strategic implications.

Annex A

Chairs, Principals and Executive Director Group

Student Data System Development Options

1. Paper purpose

For colleges and GCRB to provide their views on a preferred approach to regional student data system arrangements which will enable more detailed technical scoping and procurement to be progressed.

2. Recommendations

Members are asked to:

- consider the options presented and provide a view on a preferred approach to regional student data system arrangements.

3. Introduction

All three Glasgow colleges require to re-procure their student data software. This software provides functionality to record and analyse student and course information, including course prospectus, application, enrolment, timetabling and student support service processing.

As a core system, student data software influences significantly the manner, extent and range of interactions learners, staff and stakeholders have with the college curricula, and this student data software re-procurement provides an opportunity to consider options which would significantly progress achievement of agreed regional strategic goals.

In line with this opportunity, at its meeting in August 2017, the GCRB Board agreed the following strategic objective:

"We will develop a regional approach to student data management to support the quality and impact of this information on services provided to learners and stakeholders, supporting improved learner outcomes. This work will support the development of a regional admissions system, which provides learners with access to, and progression within, the full regional curriculum."

This paper seeks to support the achievement of this strategic objective.

4. Update on Student Data System Development Activity to Date

Over the past year, a range of discussions on potential student data options have taken place with key college staff, in the context of technical scoping work previously undertaken by the Glasgow colleges in 2015.

These regional discussions have recently been supported recently by the Regional Lead for Student Data and by Universities and Colleges Shared Services (UCSS), a not-for-profit organisation jointly owned by all universities and colleges in Scotland.

Two areas of consideration have been progressed:

- the more immediate technical development issues relevant to the re-procurement of a student data system which would meet the range of student, staff, and stakeholder needs, and shared regional strategic ambitions - further detail on this is provided in the body of this paper.
- the potential longer term development of a digital platform which would provide an interactive 'market place' for career and personal development, and drive regional and national economic growth - given the potential extent of this development, this requires more further work to scope out and seek wider support and additional resources to progress.

The following outline planning schedule is proposed to progress the more urgent student data system re-procurement through the following activity stages:

Activity Stage	Lead	Timeframe
1. Agreement in principle to an approach to regional student data system arrangements.	Chairs, Principals and Executive Director Group	March 1, 2018
2. Establishment of steering group to scope and develop a technical and operational specification.	Project steering group	March/April 2018
3. Sign off by colleges and GCRB of a joint memorandum of understanding.	Glasgow Colleges Group	April 2018
4. Development of system development project plan and scoping with college and stakeholder input, the technical specification for procurement.	Project steering group	May 2018
5. Procurement process	Regional APUC team	June/July 2018
6. Project implementation	Project steering group	August 2018 onwards

This paper presents options for regional student data system arrangements.

5. Options for Regional Student Data System Arrangements

A recent Audit Scotland report, *Principles for a digital future: Lessons learned from public sector ICT projects*, stated that it is fundamental at the start to understand the need and clearly define the benefits that you want from an ICT development. To address this risk, a set of data system needs and benefits were developed by regional leads and executive staff, and these were considered by the Glasgow Colleges Group and the GCRB Performance and Resources Committee.

Based on these defined system needs and benefits, three approaches to regional student data system arrangements are suggested:

- **Option 1. Single shared system.** In this option, all four organisations would use a single instance of an MIS system. The core database holding all data on students, courses, subjects, timetables, etc. would be shared. A common set of product modules, reporting and web

interfaces would be selected and used by staff and students across all four organisations. Other linked non-MIS systems (e.g. link to network directories) would continue to be separate in each college although there may be good reason to also consolidate other linked systems (e.g. Bursaries) onto a single platform. This option would require standardisation of data-structures (e.g. course coding), terminology, data quality and business processes. Almost all systems configurations, changes, upgrades, etc. would need to be checked and agreed between organisations before being implemented. Each student would have a student record and a single identity (e.g. login account) regardless of which college(s) they attended.

- **Option 2. Segregated shared system.** In this option a single core database would be shared among the four organisations. The interfaces and connected systems could remain separate for each college but there would be some standardisation of these across the organisations (although staff and students may see different interfaces across the four organisations). Some records would be shared across organisations e.g. student records while the system would be segregated such that other records, e.g. enrolment records, would only be accessible by the college that 'owned' them. GCRB would have access to all records regardless of their 'parent' college. This option would require a high degree of standardisation of data-structures (e.g. course coding), terminology, data quality and some degree of standardisation of business processes. Core systems configurations, changes, upgrades, etc. would need to be agreed between colleges before being implemented. Each student would have a single record regardless of which college but may have different identities according to their college. Note a similar model to this is currently used by Newcastle Colleges Group and UHI.

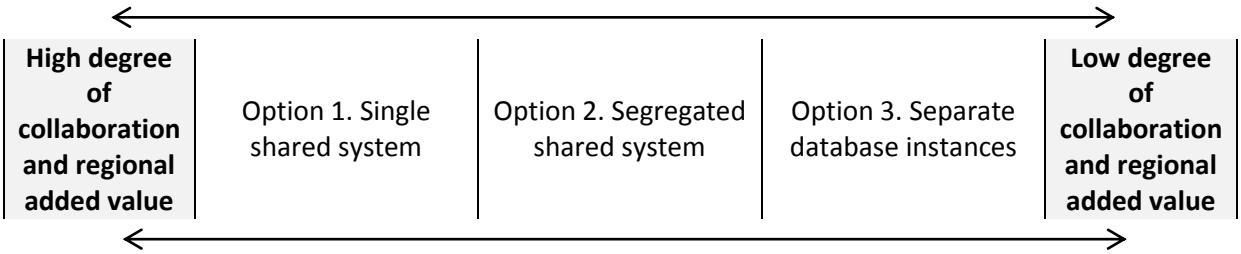
- **Option 3. Separate database instances.** This model represents a standstill position with each college continuing to have their own MIS system database. These 'instances' would remain separate: reporting tools, web interfaces and connected systems would be selected at each college. A suitable interface could be developed in addition for GCRB to be able to extract or view data across the three database instances. Some degree of standardisation on terminology, data-structures, etc. would be still desirable to support sharing of data between colleges and with GCRB but would not be a technical requirement of this model. Most systems configurations, changes, upgrades, etc. could be changed in any one college without referring to the other colleges. Each student would have a separate student record and a separate identity dependent on their college and student records could not be transferred across institutions.

To progress a more detailed specification in advance of procurement, it is necessary for there to be agreement in principle to one of the above approaches.

6. Review of Options

A detailed analysis of the above options against the set of previously developed system needs/benefits is provided in Annex A.

In terms of levels of collaboration, the 3 options considered sit on a spectrum of levels of required joint working, as illustrated in the diagram overleaf:



Options 1 and 2 are both in essence collaborative approaches, with Option 3 not requiring any additional joint working. Whilst differing in the extent of collaboration required, both Options 1 and 2 would offer additional regional added value including, for example:

- More seamless progression
  With a shared system and shared data set, it should be much easier for a student to move between different courses at different colleges. Their personal data would 'follow' them between courses and colleges. Personal data portability will be a requirement of the new GDPR legislation. Students would be "in the system" on joining one college, making their journey more efficient.

- Standardising access to systems and data, level of service and quality of experience
  Having a shared system of some could provide a standard set of systems and interfaces. Standard reporting (e.g. dashboards) across colleges would help develop shared understanding amongst the colleges. Similar standardisation and improvement in efficiency of back-office processes may also be possible.

- Facilitating joint/cross-college/multi-campus delivery
  The Foundation Apprenticeship in Creative Industries provided an early example of innovative multi-campus, multi-college delivery, whereby students study across three colleges. In an ideal situation the students on such a course would, for example, have one network account, their attendance would be recorded in one system, their SQA entries recorded in and sent from one system and all of this activity would be visible to all three colleges. A collaborative approach would offer the potential to achieve this.

- Improved regional monitoring
  Having easier access to standardised supersets of data from the three colleges would improve the reliability of data and would allow more meaningful analysis and comparison and new types of data analyses.

- Improved regional Curriculum Planning
  Providing easier access to comparable planning, performance and projection data would improve regional curriculum planning e.g. PIs, applications, demographics, demand.

- Greater system efficiencies
  A single MIS system may reduce costs through reduced licensing costs via reducing from three systems to one and/or via the competitive procurement process; reductions in the level of systems support required; improvements in efficiency of MIS operations resulting from the new system. Pooling resources may also help enable development of more advanced systems, software and data-analysis skills.

- Easier data-sharing with other organisations
  Sharing a system may support improved data sharing with other organisations e.g.: Glasgow City Council and other councils for council tax exemption; SDS for applications; local authorities and schools for applications, attendance, and progress reporting; and employers for attendance and progress reporting. There have been various discussions in the sector around being able to automatically 'pull' information from SQA systems for confirmation of certification and checking students' entry requirements. The scale of a Glasgow shared system might enable GCRB to approach SQA about commissioning this type of direct access, rather than waiting for a national development.

In addition to the above advantages, a shared approach to student data management would open the potential for the development of a regional admissions system to be considered at a later stage. Even without the development of a regional admissions system, the collaborative approaches of Option 1 and 2 would offer improved applicant tracking and planning information for colleges and the region and this would provide a platform for further development, whereas Option 3 would not offer the same benefits or opportunities.

However, it is recognised that a collaborative approach would involve additional challenges to successfully achieve a project across a range of partners, which Option 3 (separate database instances) would not entail. In addition, if procurement did not lead to a new supplier, Option 3 would allow the potential for current arrangements to continue unchanged.

Members are asked to consider the options presented and provide a view on a preferred approach to regional student data system arrangements to enable more detailed technical scoping and procurement to be progressed.

7. Risk assessment

The development of a regional approach to student data management is intended to reduce the likelihood and impact of the following GCRB identified risks:

- opportunities are missed/not resourced appropriately and the potential to add value via the strategic plan is overlooked;
- a failure to effectively plan/monitor our educational delivery results in the curriculum not meeting regional economic and social needs;
- Fewer learners achieving positive outcomes; and
- failure to achieve the targets set out in the Regional Outcome Agreement lessens our ability to meet regional needs.

Potential development timescales mean that it is important that the procurement process is progressed promptly. The UCSS project management resource mitigates this risk and provides support for a project specification to be drawn up and agreed.

In terms of risks related to project delivery, it is recognised that developing a regional approach to student data management would be a significant project, and there will be a wide range of risks to

be managed within the delivery of the project. A more detailed project proposal will outline these and planned mitigation strategies.

8. Legal Implications

No significant legal implications are identified in relation to the specification and procurement exercise. However, the implementation in May 2018 of new General Data Protection Regulations (GDPR) will have an impact on regional data management.

9. Resource Implications

There may be some potential savings which can be achieved from a joint approach to both procurement and system development. However, the primary driver for a regional approach to data management is to deliver a better student data system for learners, staff and stakeholders.

10. Strategic Plan Implications

The development of a regional approach to student data management provides the potential to directly support achievement of the following regional ambitions:

- opening up the full regional curriculum and resources to all our learners;
- building clear and flexible vocational learning pathways to widen access, and support inter-college progression;
- opening up the full regional curriculum and resources to all our learners;
- offering students inclusive support services consistently across the region;
- offering a curriculum that responds to economic and social needs;
- advancing an integrated regional curriculum with inter-linked learning opportunities to support barrier-free progression; and
- strengthening regional partnerships with schools, universities and employers to enhance flexible vocational pathways and successful learner journeys.

Appendix A: Needs/Benefits Options Appraisal

Needs	Benefits	Option 1. Single System	Option 2. Segregated Shared System	Option3. Separate Instances
The system **should support efficient learner journeys**, including seamless inter-college progression. The learner should be at the centre of our system delivery and all applicants and enrolments should have a unique record within the regional data set. When a student moves from college to college in Glasgow they should keep their existing student record.	Lessening course progression barriers will support and encourage more students to progress across the full Glasgow region curriculum, extending the range of progression opportunities available to learners and supporting the specialisation of delivery by colleges at higher SCQF levels. A single data set will also open up the possibility to better assess supply and demand at a regional level.	Very good platform for this. The student would have a single record which would follow them regardless of course, college, etc. Standardised processes and procedures would give efficient, consistent services across colleges. Single application system and process.	Good platform for this. The student would have a single record which would follow them regardless of course, college, etc. The platform would support standardisation of processes and procedures but still provide options for these to be tailored at each college. Single application portal with option to use shared process and system or have custom process and system at each college.	The student would have a separate record at each college they enrolled at. While standardisation of processes could take place this would not be a requirement of this option. Application systems would be separate and any shared portal would be an external development.
The system **should support the development and application of data analytics**, particularly to support improved learner outcomes.	Use of analytics can predict and improve service performance, with for example, learner analytics enabling better targeting of student support services to identified learner needs.	Very good platform for this in that all MIS data would be resident in one system and single interface available to all users.	Good platform for this in that core MIS data would reside in one system. Could have single shared development across all colleges or independent development for each college.	Development of analytics could be shared across colleges but would work independently at each college.
The system **should encourage greater standardisation of data** across the four Glasgow organisations.	Regional standardisation will support more efficient data recording and reporting and in turn improve the effectiveness and quality of data analysis across the region, particularly with regards to curriculum planning and monitoring. Greater standardisation will also support a more consistent level of service delivery for learners across the region, a key ask highlighted by the recent City Council review of college and lifelong learning.	Mandatory standardisation – common structure and definitions for all MIS data and processes. Planning, enrolment and application data would be standardised and comparable.	Almost all MIS data structures standardised. Student record would be standardised and shared, other structures would need to be standardised to support shared processes and regional data sharing.	Standardisation only required as far as desirable and/or to support regional data sharing. Some standardisation could be developed and regional analysis could be provided via a GCRB interface.

Needs	Benefits	Option 1. Single System	Option 2. Segregated Shared System	Option3. Separate Instances
The system **should provide more efficient and effective data processing and reporting**.	More efficient and effective data collation and reporting will both reduce resources required to meet current data needs and provide additional capacity to extend data functionality within current resourcing levels.	Very good platform for this. All organisations would be using the same data, processes and services in the same system. Users would see the same interfaces.	Good platform for this, all organisations would be using the same student data, would have aligned other data but would retain some degree of flexibility over configuration. Users would see some shared interfaces and some dependent on their organisation.	Depends on implementation – if separate instances were on same server, shared reporting may be easier. Shared reporting would still be possible if instances were completely separate.
The system **should support and inform curriculum planning and monitoring** through high quality data reporting which allows analysis of a single data set at college and regional levels. This should encompass the ability to analyse at regional and college levels both current in-year and future-year curriculum plans.	Access to, and use of, high quality data is integral to the effective planning and delivery by the colleges and GCRB of a coherent regional curriculum which meets and responds to economic and social needs. Being able to effectively monitor the efficiency of curriculum delivery is also key to regional and institutional sustainability.	Very good platform for this as standardisation would be mandatory and there would be a single standardised, comparable data set for the whole region.	Good platform for this. Standardisation of core data would be required and would be supported by this solution. Reporting and analysis would be available across the region.	Some limited reporting and analysis could be developed across the region for GCRB. Some standardisation would be required to enable this reporting desirable.
The system **should integrate well with existing system interfaces**.	Integration with existing business flows will allow greater functionality and a wider scope of data-orientated services to be offered to learners, staff and stakeholders (for example effective integration with bursary systems). Integration issues represent a key business continuity risk with potential cost implications so effective integration will minimise risks.	Number of existing systems/system interfaces may be reduced in light of this model. A single set of MIS interfaces would be adopted across colleges and rationalisation of other connected systems would be supported e.g. single bursary system. Note that move to a single database product and/or move to a different MIS product would require replacement of at least some system interfaces.	Colleges may choose to adopt shared interfaces or integrate their 'segment' of the shared system with the existing interfaces. Note that move to a single database product and/or move to a different MIS product would require replacement of at least some system interfaces.	Existing links would continue to function as before. Note that move to a different MIS product would require replacement of at least some system interfaces.
The system **should support opportunities for further regional collaboration** on areas such as admissions, student support and timetabling.	Developing a core MIS system which provides capacity for further regional collaboration will support a staged approach to increased regional collaboration and consistent service development.	High degree of collaboration required to implement and operate this type of solution.	Some collaboration required to implement and operate this solution, provides enhanced support for further collaboration.	Limited collaboration required to implement and operate this solution but may support some further collaboration.
The system **should support future adaptability** and develop best of breed functionality for learners, staff and stakeholders, improving the capacity of student data services to impact on the quality of services provided to learners, staff and stakeholders.	Building in future flexibility will enhance the ability for the region to collectively maximise further potential collaborative opportunities and the quality of services provided to all learners, staff and stakeholders.	This model ties all colleges to the same shared MIS system. Any change or development to that system must be agreed with all partners in advance. Having a single system likely to encourage sharing of other related systems also.	This model ties all colleges to the same shared MIS system. Most changes or developments to that system must be agreed with all partners in advance. Having a single system may encourage sharing of other related systems also.	This model ties all colleges to the same MIS product/system although the instance is not shared. Some consideration should be given to effect on partner colleges before any change or development is implemented.