



**A Critical Reflection on the Footprint of Articulation Agreements at
Select College-University Pairs**

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Contact Information

Durham College

Debbie McKee Demczyk
Office of Research Services, Innovation and Entrepreneurship
debbie.mckeedemczyk@durhamcollege.ca
(905) 721.2000 ext. 3669

University of Ontario Institute of Technology (UOIT)

Brad MacIsaac
Planning Analysis and Registrar
brad.macisaac@uoit.ca
(905) 721.8668 ext. 5688

Canadore College

Jeannette Miron
Strategic Enrolment Services
jeannette.miron@canadorecollege.ca
(705) 474.7600 ext. 5341

Nipissing University

Debra Iafrate
Office of the Registrar
debrai@nipissingu.ca
(705) 474.3450 ext. 4251

Seneca College

Henry Decock
Centre for Research in Student Mobility
henry.decock@senecacollege.ca
(416) 491.5050 ext. 77929

York University

Paula Green
Office of the Vice Provost Academic
pgreen@yorku.ca
(416) 736.2100 ext. 77666

EXECUTIVE SUMMARY

Previous research on student transfer has primarily focused on the student experience. A number of studies have explored student understanding of and satisfaction with the credit transfer process, but the same rigor has not been expended to explore the institutional perspective on credit transfer. The purpose of this study is to understand the reasons institutions undertake the development of articulation agreements, and the type of criteria that the faculty members and administrators involved in their development believe should be included in the documentation of those agreements. In addition, institutional policies and procedures related to the monitoring of articulation agreements were examined to determine how agreements are kept current and how they are monitored for markers of student success such as retention and graduation. The goal of this study was to see where commonalities existed in these processes across institutions to identify best practices for developing and maintaining effective articulation agreements. Data analyses were conducted based on a content analysis of the articulation agreements available at each of the institutional pairs, an analysis of themes present in a series of semi-structured interviews, and student transfer data provided by each of the participating universities.

The reasons that institutions develop new articulation agreements are similar for both colleges and universities. Program alignment and previous relationships between institutions were identified as the most prominent reasons for developing new agreements. Universities placed emphasis on developing agreements where there was adequate alignment between programs, while colleges placed emphasis on developing agreements that provided their students with sufficient credit for their previous coursework.

Many articulation agreements include guidelines to ensure the agreements remain current. These guidelines include renewal dates and procedures for keeping the partners updated on program changes. Despite the presence of these guidelines, interview data revealed that poor communication between institutional partners often results in agreements not being regularly updated. Interview data, combined with the student data, also revealed that there are gaps in the way transfer student success is monitored post-transfer. The majority of receiving institutions were unable to identify which of their transfer students had used specific articulation agreements to facilitate their transfer leading to significant challenges with monitoring of specific articulation agreements. In addition to this, two out of three receiving institutions were unable to

identify the college program that transfer students had previously completed. Although data does exist to enable tracking of transfer student success, accessibility of data and resource constraints have not allowed articulation developers to use this data to inform the development of better articulation agreements.

One of the key findings of this study was that having a strong working relationship between institutional partners was imperative to the development and maintenance of articulation agreements. To strengthen institutional relationships, it is recommended that institutions work towards implementing standardized procedures for developing and maintaining agreements that encourage frequent communication with their institutional partners. It is also recommended that a movement towards standardizing formal agreements through institutional templates has the potential to save resources and ensure consistency when developing new agreements. The use of a consistent, comprehensive template affords an opportunity to make the transfer process more transparent for both students and institutions alike.

An important finding of this study was that more attention should be given to monitor the success of students post-transfer. Although data on retention and graduation is available for transfer students, these students are not flagged as having moved through an articulation agreement, meaning that it is difficult to monitor the success of these students as a cohort. A key recommendation that could improve monitoring for student success would be to collect more information about transfer students to enable tracking for student success outcomes. Another recommendation is that this data be shared with the institutional stakeholders who develop articulation agreements, so these individuals are made aware of the types of agreements that work versus those that do not. Finally, it is recommended that the sharing of student success data between institutional partners become part of an annual effort to monitor the effectiveness of these agreements.

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SECTION I: BACKGROUND

Purpose of the Study

A large proportion of recent research on student transfer pathways has been rooted in the viewpoint and satisfaction of the students themselves. The process of credit transfer has thoroughly explored the student perspective, including students' awareness and understanding of the process, as well as their satisfaction with post-transfer outcomes (Durham College, 2016; Colleges Ontario, 2008; Academia Group, 2017). The purpose of this study is to examine the structure and utility of current articulation agreements by exploring the institutional perspective towards the development and maintenance of articulation agreements.

As institutions face increasing demands to create a seamless educational experience for students by supporting mobility, an examination of articulation agreements must occur to ensure students have the best chance of achieving their academic goals while institutions retain value for their investment in pathway creation. Thus, this study aims to examine the reasons that institutions develop new pathways and identify specific criteria that should be included in the formal documentation of these agreements. The study will also explore the extent to which articulation agreements are monitored for currency, as well as for markers of student success such as retention and graduation.

Research Questions

The following research questions will be explored in this study in an effort to promote effectiveness of articulation agreements:

Section 1: Creating an Articulation Agreement

1. What rationale inform the creation of frequently utilized articulation agreements?
 - a. Do these characteristics differ from less utilized agreements?
 - b. Is the rationale for frequently utilized articulation agreements readily identifiable?

2. Are the key criteria for the establishment of articulation agreements, common for certain institutions?

Section 2: Updating an Articulation Agreement

3. What unique criteria are used to ensure that the reasons for pathway development remain valid/current?
 - a. What steps would be taken if pathways were found not to be current?
 - b. Are there additional criteria that should be included?
 - c. Do such criteria require updating?
 - d. What are the processes that are used for updating pathways?

Section 3: Monitoring Articulation Agreement Usage

4. Is data available to determine student usage of articulation agreements?
 - a. If so, to what extent are students utilizing these agreements?
 - b. What trends in usage appear in recent years?
 - c. Are there agreements that are unused? If so, do these agreements remain active?
5. What are the trends for student persistence and graduation, for students taking advantage of the articulation agreements?

Definitions of Key Terms

The following is a list of key terms used throughout this report:

- **Articulation Agreement**: Official agreement between two (bilateral) or more (multilateral) postsecondary institutions that defines the terms and conditions enabling students to transfer between specific programs
- **Credit**: The recognition of previous coursework completed by a student through granted credit hours in lieu of classwork.
- **GPA Minimum**: Minimum GPA required for consideration for admission into a program as articulated in the agreement.
- **Pathway**: Defined route from one program or institution to another program or institution that specifies eligibility requirements and how transfer credits will be accepted and applied at the receiving institution

- Periodic Review: Refers to the pre-specified, cyclical period when the articulating institutions agree to review the articulation agreement. It may be expressed as a specific future date or as a general period of time.
- Physical Resources: Resources needed to effectively operationalize the agreement, either formally articulated in the agreement or through informal assessment by the articulated partners.
- Program Alignment: The extent to which articulating programs are similar in terms of curriculum, learning outcomes and occupational areas of interest for graduates.
- Program Changes: Refers to substantial changes in the curriculum, credits, pre-requisites or any related aspects of the postsecondary program.
- Relationship between Institutions: Refers to a pre-established working relationship between institutions. This could occur through either formal collaborations or other informal interactions induced by geographic proximity or other commonalities between institutions.
- Student Mobility: Refers to opportunities that promote student movement and encourage academic continuation.
- Student Success Outcome: Refers to the institutional practice of tracking markers of student success such as retention and graduation.
- Transfer: The movement of a student from one postsecondary institution to another with credit granted by the receiving institution for courses taken at the sending institution

Limitations of the Study

This study was extensive in its scope and was largely exploratory within an area of research that has otherwise been previously unexplored. As can be expected with a study of this size, there were a number of limitations. Student demographic information was not requested as part of the student usage data from each college-university pair, in order to keep the study focused on the institutional perspective. Hence this study does not address unique attributes of individual transfer students.

There were also limitations related to the availability of data. Most institutions did not maintain explicit records of whether a student had transferred using a formal articulation

agreement. Instead, each university provided data for all of their incoming transfer students who had declared previous experience at the partnering college. The student dataset was therefore populated assuming that any student who had transferred between programs where an articulation agreement existed had transferred using that agreement.

Another limitation with data collection was an inability to identify the particular college program that a particular student had transferred from. Specifically, not all institutional contacts were able to specify which college program incoming students had previously completed. Some institutions also offered more than one version of the various degree programs. The student transfer data collected did not capture the unique variation between a 120 credit honours bachelor degree or a 90 credit bachelor degree.

SECTION II: LITERATURE REVIEW

Articulated pathways have become increasingly common in post-secondary education. Recent research has demonstrated that students are increasingly reporting previous post-secondary experience, and many report the desire to pursue multiple credentials (Colleges Ontario, 2009). Similarly, it has become increasingly common for students to move between programs and institutions as their academic goals or personal circumstances change. As a result, it has become necessary for institutions to make pathways available to students which enable the seamless transition between institutions and programs. These pathways are often formalized and referred to as articulation agreements. Articulation agreements represent a written commitment between the administrators at each institution, linking their respective programs through guidelines for credit transfer (ONCAT, 2013).

The purpose of articulation agreements is to facilitate student transfer between post-secondary institutions, in an efficient and non-repetitive way. By acknowledging the previous learning students have done, articulation agreements enable transfer students to avoid the needless repetition of courses while working towards a desired credential (ONCAT, 2013; Government of Ontario, 2017). When it comes to the development of articulation agreements, there are three important perspectives to be considered: the student perspective, the perspective of the sending institution, and that of the receiving institution. From the student perspective, articulation agreements provide assurance of the ability to move between programs, and clarify the processes involved in transferring. From the perspective of the sending institution, articulation agreements represent a guarantee that the credentials earned by their students will be recognized and appropriately valued by the receiving institution. From the perspective of the receiving institution, articulation agreements represent an assurance that incoming students will possess the skills required to be successful in their programs post-transfer.

Articulation agreements promise a number of benefits for students and institutions alike. For students, these agreements enable entry into post-secondary programs while providing the opportunity for additional skill development at each institution they attend. For the sending institutions, these agreements convey value for the credentials they grant, potentially making the credential more sought after. For receiving institutions, articulation agreements ensure that students with requisite skills and knowledge are joining and contributing to the viability of the

program as they progress toward graduation. However, for such an important and universally beneficial process, not much is known about the administrative goals and processes that inform the creation of articulation agreements.

Recent, research on articulation agreements has primarily focused on the student experience and has highlighted a number of student issues, such as a lack of awareness and understanding of the transfer process (Durham College, 2016; Colleges Ontario 2008; Academia Group, 2017). However, while extensive research has been conducted on the student perspective on credit transfer, very little has been done to explore the institutional perspective on articulation agreements and credit transfer. As such, very little is known about the reasons why, or the process through which, institutions develop and maintain articulation agreements.

One factor that contributes to the lack of knowledge about the institutional perspective on articulation agreements is that few institutions provide public access to the policy documents that govern student transfer. In some cases, formal written records of agreements or related policies do not exist at all, making it difficult to assess how these processes vary from institution to institution. As a result, little is known about how the inclusion of certain criteria in articulation agreements contributes to the effectiveness of the agreement. Similarly, little is known about how the consultation of various institutional stakeholders may vary between, or even within, institutions. In order to establish best practices for developing articulation agreements, further exploration of these phenomena are needed. This is a significant gap in the literature on articulation agreements that this research will seek to bridge.

The Purpose of Articulation Agreements

Articulation agreements and credit transfer are an important part of the postsecondary experience for many students, as they promote student preparedness and academic continuation. From a student perspective, the purpose of an articulation agreement is to provide assurance and clarity on the transfer process. Through these formal agreements, students are able to complete their studies in a shorter period of time than would otherwise be possible. This streamlining is important, as one responsibility of postsecondary institutions is to prepare students to enter the labor market. Articulation agreements support this goal by enabling students to engage in a variety of learning experiences which prepare them to enter the labour market (Government of Ontario, 2017). This additional experience gained by students who have studied at both college

and university makes them more competitive in the eyes of future employers (McCloy, Steffler, & Decock, 2016). Thus, articulation agreements provide students with a well-rounded learning experience that supports them in developing a wide range of skills that prepare them to succeed when entering the labour market.

Articulation agreements also offer students the chance to continue their education when their individual circumstances would otherwise prevent them from doing so. For example, for students whose grades make them ineligible for university following high school graduation, articulation agreements provide an opportunity to adjust to post-secondary expectations and improve their grades before re-applying (Smith, Decock, Lin, Sidhu, & McCloy, 2016). In the case of students who relocate, articulation agreements enable movement between institutions and the continuation of study. Articulation agreements also provide access to post-secondary programs for mature students who may aspire to higher education but have been out of school for a number of years. This is an important demographic to support, as mature students often have very different life circumstances and responsibilities than students straight out of high school (Lauder & Cuthbertson, 1998; Wilson, 1997).

Beyond their utility for students, articulation agreements also benefit the institutions that offer them. From the institutional perspective, articulation agreements ensure that credentials from the sending institution will be valued, while assuring the receiving institution that incoming students will be well-prepared for their new programs (Government of Ontario, 2017). Articulation agreements also serve to add value to institutional credentials by linking them with programs at other credible institutions. By providing options for student mobility, institutions are able to increase both the attractiveness and perceived value of their credential to prospective applicants, potentially contributing to increased student enrolment. Additionally, articulation agreements allow institutions to streamline the credit transfer process through standardization of credit to be granted. This streamlining reduces the resources that would otherwise be required to assess transfer students on a case by case basis. Thus, articulation agreements enhance the effectiveness of the credit transfer process for students and institutions alike.

The Criteria Included in Articulation Agreements

The development of a formal articulation agreement between institutions can be long and arduous, due to the number of criteria that need to be included and negotiated to ensure the agreement will be effective (Durham College, 2016; Auld et al., 2002). The purpose of including these criteria is to create a threshold for consideration of acceptance for an articulation agreement, assuming that students who meet the criteria will be better prepared for the receiving program than those who do not. There is currently no list of agreed upon criteria that must be included in articulation agreements in Ontario. As these criteria are not standardized and many institutions do not allow public access to their policy documents, it can be difficult to identify whether there is overlap in the criteria that are included in the agreements of various institutions. However, based on the criteria that are frequently discussed in relation to student transfer, an argument can be made for the type of content that should be included in the documentation of formal articulation agreements.

Number of credits granted. There are a number of considerations that go into determining the amount of credit that will be granted as part of an articulation agreement. Such considerations include program alignment and requirements needed for program completion, as well as minimums and maximums for the number of transfer credits that can be granted. One instance where these considerations are particularly important is in the number of credits to be granted for students with diplomas compared to students with advanced diplomas. Since advanced diplomas traditionally cover an additional year of content compared to standard diplomas (Types of Programs, 2018), advanced diploma students may receive more transfer credit as they will have a greater breadth of study. In fact, it has been shown that number of credit hours completed increases the likelihood of a student completing a transfer, and that taking higher level courses has been associated with a greater likelihood of success post-transfer (D'Amico, Dika, Elling, Algozzine & Ginn, 2014).

In addition, there is evidence to suggest that the number of credits granted is associated with Grade Point Average (GPA), such that more credits granted predicts a higher GPA in the transfer program (Gerhardt & Masakure, 2016). This is true even controlling for a number of other factors such as campus, cohort, semester of study, or previous college background. However, there is also evidence that this effect may be non-linear, in that credits up to a certain

amount are predictive of a higher GPA, while after that point GPA tends to drop off again (Gerhardt & Masakure, 2016). This indicates that assigning credit efficiently can play an important role in whether a student is successful in their program post-transfer.

GPA minimum. Previous research has found evidence that having a higher GPA at the time of transfer is related both to academic success post-transfer and retention (Wang, 2009; Luo, Williams & Vieweg, 2007). As such, the inclusion of GPA minimums in articulation agreements may serve as both a threshold for consideration for acceptance, as well as an indicator of student preparedness. This is important, as student preparedness has frequently been shown to have a positive relationship with student success post-transfer (Durham College, 2014). Ensuring that incoming students meet minimum GPA requirements may help to assure both the sending institution and the receiving institution that transferring students will be successful in their new programs.

GPA has also been studied within the context of “transfer shock,” which refers to the phenomenon of students experiencing a decline in GPA following a transfer into a new program (Cejda, 2006). Transfer shock has traditionally been studied within the context of monitoring student success post-transfer between high-affinity programs. These studies have found that students transferring within the areas of business, mathematics, and science experience more transfer shock than their counterparts in education, fine arts, and social sciences and humanities (Cejda, 2006; Cejda, Kaylor & Rewey, 1998).

Bridge versus direct entry. Another important criteria that should be identified in an articulation agreement is whether the transfer will be direct entry or include a bridge semester. A direct entry agreement is defined by a 2+2 program delivery where a student completes a two year diploma and then moves directly into the third year of a degree program (Trick, 2013). By contrast, a bridge is defined by a 2+2.5 program delivery where a student completes a two year diploma and then moves into the third year of a degree program after completing a summer of bridging courses (McCloy, Steffler, & Decock, 2016). These courses are intended to prepare students for their post-transfer degree program by making up any requisite content needed for the degree program that was not delivered by the diploma program.

Awareness. In previous studies, students have reported not finding out about the possibility of articulating until after they were already enrolled in a college program (Academia

Group, 2017). In this study, only 39% of students reported being aware of the possibility when they first applied. At the time of the study, only 7% of respondents were involved in a pathway program, despite 28% reporting that they would have been interested had they been aware of the option at the time of their application. An earlier study conducted by Durham College (2016) found that the top three ways students hear about the possibility of credit transfer are through a friend or family member (26.4%), a faculty member (21.8%), or through their current school's website (21.8%). However, 56.6% of students reported that they would have liked to receive information on credit transfer with their admissions booklet. These discrepancies highlight a difference between how students want to be made aware of their transfer options and how they are actually being made aware of their options. This difference may lead to fewer students taking advantage of articulation agreements than would otherwise be the case, simply because they are unaware that the option exists (Academia Group, 2017).

The Institutional Stakeholders Involved in Articulation Development

There are many different aspects that must be outlined in an articulation agreement, each requiring the unique expertise of a variety of different institutional stakeholders. For example, determining alignment between programs typically requires individuals from both the sending and receiving institutions who are intimately familiar with the program content to evaluate learning outcomes at the course and program level. This expertise ensures that students enjoy a successful transfer experience while minimizing the unnecessary repetition of courses with similar learning outcomes. Similarly, administrators may make recommendations on the maximum number of transfer students admitted during a given year based on space limitations. The institutional stakeholders responsible for each of these tasks may vary depending on how each institution divides administrative responsibilities, or who holds the necessary expertise. Additionally, there may be other academic structures that influence the development of articulation agreements. For example, at the university level, articulation agreements may need to be approved by the institutional senate or the academic council, while at the college level there is an entirely different approval process often unique to a given institution.

There are currently no standardized guidelines for who should be responsible for specific tasks related to articulation development across institutions in Ontario. As these processes are unique to each institution, it is difficult to determine based on past research whether there are

similarities in how institutions delegate tasks when it comes to the development and maintenance of agreements. There is evidence that administrative staff (McGowan & Gawley, 2006) and faculty (Ignash & Townsend, 2000) are often involved in the process, although there is little information as to the specific tasks they are likely to undertake. However, recommendations from past research do highlight the importance of institutions ensuring their administrative capacity is able to withstand the growing demands of articulation development and maintenance (Gawley & McGowan, 2006). Additionally, recommendations have been made about ensuring ongoing communication between each institution and students, to ensure that all involved parties have a thorough understanding of the process.

Improving Articulation Agreements in Ontario

In 2009, only 17% of college students in Ontario reported having previous post-secondary experience; in contrast, up to 41% and 48% of college students in Alberta and British Columbia respectively reported having previous post-secondary experience (Colleges Ontario 2009). In another study, college students in Ontario reported finding the process of articulating to be difficult and confusing (Durham College, 2016). Additionally, students reported not being aware of the option to transfer as early as they would like to be (Academia Group, 2017), not knowing who to contact when they have problems, and not being granted as much credit as they believe they should (Durham College, 2016).

However, the creation of the Ontario Council on Articulation and Transfer (ONCAT; established 2011) is evidence of a systemic commitment to better understanding pathways, for both students and institutions. Specifically, ONCAT's mandate involves commitments both to students and institutions that promote greater understanding about the transfer system in Ontario. Not only is ONCAT committed to improving communication about mobility opportunities to students, but they are also committed to helping institutions identify and fill gaps in the system in order to improve the available opportunities for mobility (ONCAT, 2013).

In the six years since its conception, ONCAT has worked to improve student mobility in Ontario. However, there is still room for further improvement. Much is still unknown about how articulation agreements are developed, such as the institutional stakeholders who are involved in the development of articulation agreements and the criteria that should inform their creation. The process of developing articulation agreements is not standardized within institutions, let alone

across institutions or provinces. Students in Ontario have expressed a desire for there to be a standardized approach to student transfer, which would ensure consistency and fairness across institutions (Durham College, 2016). Such an approach would promote increased understanding of the process for both students and institutions. In order to develop a framework for standardization, an analysis of the current policies and processes related to the development and maintenance of articulation agreements at institutions across Ontario must be conducted. Best practices for developing effective agreements will be determined by seeing where there is overlap across institutions, and where that overlap is successful in promoting student usage of articulated agreements and the resulting student success.

SECTION III: METHODOLOGY

Participants

This study was conducted using the data from three college and university pairs within the province of Ontario. Participants were chosen by employing a convenience based sampling strategy seeking representation from small, medium, and large paired institutions. These classifications align with the classifications of college size according to Colleges Ontario (PwC, 2017). The chosen pairs of Canadore College and Nipissing University, Durham College and the University of Ontario Institute of Technology (UOIT), as well as Seneca College and York University were recruited based on existing relationships between institutional representatives. In part, these pairs were invited because they were known to have a history of collaboration, and hence a rich student transfer environment.

Across Ontario, there are a number of post-secondary institutions that vary according to size by student enrolment. Variation in the number of students and the number of programs at an institution may have some effect on the number of articulation agreements established. For example, large institutions often have a greater number of programs and thus a greater number of potential pathway creation opportunities. The purpose of including pairs of varying sizes was to provide some example of the variation that may exist among these pairs, and to allow for an examination of the development of articulation agreements in Ontario regardless of institution size. In order to maintain the confidentiality of the institutions involved in this study, the pairs were randomly coded and are identified as C₁U₁, C₂U₂, and C₃U₃ for the purpose of reporting analyses and results.

Procedure

Each of the six prospective partnering institutions were invited to participate in the study, via email to an institutional contact at each school. As the study included six institutions, Research Ethics Board (REB) approval was sought from each institution (only one submission was made for Canadore and Nipissing, who share a board), as well as from the Multi-Site Approval Board.

Initially, each contact was asked to provide all of the available articulation agreements for their institution to the research team. Upon receiving these agreements, a content analysis was undertaken to identify the discrete criteria included in each articulation agreement. Thereafter,

the institutional contacts were contacted to assist with scheduling interviews. Interview requests were made with academic deans and administrators at each institution, based on the extensiveness of their experience with developing articulation agreements. Once the interviews had been conducted, they were transcribed and sent back to the interviewees for their approval. Upon approval, the transcripts were coded for key themes by which the interview data could be organized.

Finally, the research team requested data from each participating university for students who had transferred from their college partner (e.g., had declared previous experience at their partnering college; see Appendix A). To ensure consistency of data reported across various institutions, a template in Microsoft Excel containing the requested variables was provided to the respective institutional contacts to populate. Student transfer data was examined with the information collected from the content analysis of articulation agreements.

Methods of Data Collection

Data for this study was collected in the form of articulation agreements, interviews, and student transfer data. The purpose of examining the articulation agreements was to develop a framework of the criteria included in the agreements available at each partnering institution that could potentially inform future agreement creation. The purpose of requesting student transfer data was to examine student usage of each agreement to determine whether the inclusion of certain criteria made those agreements more attractive to students. Finally, the purpose of conducting interviews was to expand upon the information available in the agreements to further clarify the institutional perspective. Together, these three sources were used to create a comprehensive understanding of the institutional perspective on articulation agreements.

Articulation agreements. An inventory of articulation agreements between the three participating college-university pairs was compiled for content analysis. To ensure that the study remained in scope, only agreements that articulated between a college program (e.g., certificate, diploma, or advanced diploma) and a university degree program were considered. It is important to note that the agreements included in this analysis reflect those that were available at the time of data collection and may be different from those available at the time this report is released. In total, 281 articulation agreements were examined across the three institutional pairs. This number reflects the number of formal pathways available rather than the number of articulation

documents, as several documents detailed more than one transfer agreement. A dataset was created for each pair of institutions that included all of the agreements operating between the two schools, categorized by the criteria documented within them. Each available agreement was evaluated for elements of both mechanical (e.g., GPA requirements, number of credits to be granted) and administrative (e.g., guidelines for updating, length of agreement) structure, to see which criteria were commonly addressed across institutions, and which were unique.

Interviews. Semi-structured interviews with two to three academic deans or other key personnel (e.g., pathway officers) were conducted at each of the participating institutions. There were six interviews conducted at the college level and eight interviews conducted at the university level, for a total of 14 interviews. Individuals were selected based on recommendations from the institutional contact, determined by who had the most experience with developing articulation agreements. Each interview lasted between 30 and 45 minutes, and covered a number of subjects related to the development and maintenance of articulation agreements (See Appendix B). The purpose of these interviews was to provide a better understanding of the criteria involved in articulation development, beyond what was included in the agreements themselves.

Student data. Enrolment data was collected from each of the receiving institutions for transfer students who had enrolled between the years of 2011 and 2015, and who had declared previous experience at their partnering college. The data set included variables such as the college program the student transferred from, the university program they transferred into and whether a formal agreement had been used to facilitate transfer, where such information was available. Information was also collected on the specific year students transferred, and whether the student was still enrolled in the university program two years after their transfer. The purpose of collecting this data was to allow for an assessment of the utilization of each agreement in terms of student interest, uptake, and student persistence. However, most of the institutions did not maintain explicit records of whether a student had transferred using a formal articulation agreement; thus, this information had to be inferred. To facilitate this inference with confidence, the data for movement of a student between institutions was organized by both sending and receiving program. In cases where an agreement existed between those sending and receiving programs, the data was used to infer student usage of that agreement.

SECTION IV: DATA ANALYSIS

Rationale that Inform the Creation of Articulation Agreements

To better understand the motivations that drive institutions to develop new articulation agreements, the research team conducted a series of interviews with persons familiar with articulation development or maintenance at each institutional partner. Interviewees were asked a series of questions to examine the considerations that were important in the decision to develop a new articulation agreement. Several responses appeared across both college and university interviews while there were also a number of responses that were unique to one institution or another (refer to Table 1).

Table 1: Key considerations for development of a formal pathway

	College	University
Program Alignment	4	6
Relationship between Institutions	3	5
Student Mobility	3	5
Student Interest	3	4
Enrollment	3	4
Institutional Strategic Priority	2	4
Sufficient Credit	4	1
Program Reputation	1	3
Regional Viability	3	1
Labor Market Viability	3	1
Physical Resources	0	1
Student Success Outcomes	1	0

The most common reasons reported for undertaking the development of an articulation agreement were, program alignment, a pre-existing relationship with the institutional partner, and promotion of student mobility. These responses were the most common across both the college and university interviews, demonstrating that both types of institutions envision these as important considerations in the decision to develop new agreements. Program alignment was addressed in a number of different ways. For interviewees from universities, program alignment related to a desire for assurance that incoming students would be well prepared for success in their new programs. A number of university interviewees expressed a desire to continue developing articulation agreements, but cautioned against developing agreements where there was not sufficient program alignment. These interviewees indicated concern that trying to

develop agreements where there was low alignment could lead to students struggling in their new programs as a result of not having covered requisite course content.

The college interviewees approached program alignment by placing an alternative emphasis on the importance of developing agreements that grant their students sufficient credit

“[Two for two] is usually what we’re going after now. So they have two years of a diploma and you’ll be able to finish your degree in two years.”

for the previous course work they have completed. College interviewees expressed a desire to see their credentials acknowledged by their university partners through the assignment of an appropriate amount of credit to students. The general consensus was that in programs that are well aligned, previous college

experience should be viewed as taking the place of the first two years of a university degree, and therefore the desired amount of credit is often equivalent to two years.

Relationship between the institutions was discussed within the interviews both in the form of program level and faculty/school level relationships, and the pre-existing relationship between the institutions. Examples of program level relationships most often emphasized the

relationships between individual instructors, where faculty/school level relationships often emphasized relationships between individual Deans or other senior administrators. Most interviews identified pre-existing articulation agreements as a key defining factor in their relationship. Such agreements represented assurance of a willing partner institution and a history of successful collaboration leading to a belief that future agreements

“You also have faculty that come from other environments where it has worked well, and so some of them can be great advocates in terms of ‘I did this at my previous institution, we had some really amazing students coming this way, can we consider it here?’”

would be successful. Another recurring theme throughout the interviews was how the previous experience of the individuals involved could drive the development of articulation agreements. For example, a faculty member coming in from another institution where there were a number of successful articulation agreements and bringing that experience with them, leading to the development of new agreements.

Student mobility was emphasized as the promotion of student movement through offering agreements to facilitate transfer. While every institution emphasized the importance of

facilitating student transfer, several indicated that the desire to provide students with access to further learning opportunities was at the heart of their decision to develop articulation agreements, even where relatively little student movement was expected.

Data was also analyzed at the institutional level, to identify common considerations between partnering institutions. C₁U₁ displayed some overlap specifically concerning enrolment. The college in this pair emphasized the importance of undertaking pathway development for the purpose of recruiting students, where the university emphasized the importance of pathway development related to supporting enrolment. C₃U₃ similarly demonstrated overlap related to the theme of program reputation. The college partner in this pair indicated that the reputation of the program, alignment, and granting of sufficient credit were all key consideration for undertaking new articulation agreements. The university partner in this pair similarly indicated the quality of the college program and alignment between credentials were important considerations prior to undertaking the development of new articulation agreements. However, further exploration through interviews indicated that the perception of a quality college program was not based on an established set of criteria, but rather an individual perception. C₂U₂ demonstrated the most overlap among the institutional partners interviewed each indicating the importance of regional and labour market viability, program alignment and the relationship between institutional stakeholders as key to the decision to develop new agreements.

In addition to identifying the institutional motivations behind developing articulation agreements, interviewees were also asked to identify criteria that should be outlined in the documentation of an articulation agreement. Highlights of the responses are displayed below (refer to Table 2).

Table 2: Necessary Criteria

	College	University
Program Alignment	1	5
Credit	3	3
Physical Resources	1	4
GPA Minimum	1	3
Information Sharing	1	2
Bridge	0	2
Regional Viability	1	0
Labor Market Viability	1	0
Student Support	1	0

The most common responses indicated that program alignment, the number of credits that would be granted, necessary physical resources and the minimum GPA needed to qualify for admission under the agreement were believed by interviewees as necessary to include in the formal documentation of a new articulation agreement. University interviewees again identified program alignment as a top consideration. As the receiving institutions, university interviewees also noted the importance of considerations such as the physical resources that would be necessary to operate the agreement effectively (e.g., available lab space). College interviewees emphasized the importance of regional and labour market viability to some extent however, it was not a key consideration for receiving partners. Similarly, college interviewees emphasized the importance of making sufficient student supports available to students throughout the transfer process.

When examining the current articulation agreements at each of the partnering institutions a number of the criteria described in the interviews were found to have been included in the formal documentation. For example, credits to be granted and minimum GPA were outlined in all agreements where they were applicable. In some cases, articulation agreements outlined movement from a college program into a selection of different university programs. As the minimum GPA for each programs varied, a minimum GPA was not listed in these agreements.

The content analysis also revealed that considerations around information sharing were mentioned in most of the agreements, regardless of institutional pair. This occurred either broadly (e.g., outlining that each institution had to report program changes to their partner), or in a way that was more structured. An example of communication between partners being more structured can be found in the C₃U₃ agreements specifying that their agreements would be reviewed every spring by both institutions. In contrast, the interviews revealed that the majority of ongoing communication was informal and borne out of the relationships between senior administrators at partnering institutions. In addition to this, interviewees also indicated that specific bridging courses should be outlined in the documentation of an agreement. Evidence of this practice was discovered in the content analysis, such that all of the agreements where bridging courses were necessary outlined which courses the student would be required to take during the summer following a transfer.

Criteria inclusion and student usage. The interviewees were not able to conclusively identify the criteria that were related to student uptake of specific agreements. To determine this, a series of t-tests were conducted to look at mean differences in student usage for agreements where the criteria were included. Although usage of individual agreements was not able to be determined for the C₁U₁ pair, usage of the articulated C₂U₂ and C₃U₃ agreements were analysed and are reported below.

Percent of credit granted. The first criteria examined was percent of credit granted. For the purpose of analysis, this variable was separated into comparison groups based on the range of data available for each institutional pair. For the C₂U₂ pair, percent of credit granted ranged from 13% to 50% and was therefore separated into four comparison groups (< 29%, 30%-39%, 40-49%, and 50% +). A test of homogeneity of variance revealed that assumptions were violated, thus the Welch's F was used for testing and was found to be significant ($f = 9.15, p = .001, df [3, 19.30]$). A post-hoc analysis determined that there were significant mean differences between the < 29% and 30%-39% groups ($MD = -31.11, p = .01$), as well as the 30%-39% and 40%-49% groups ($MD = 35.23, p = .005$), and the 30%-39% and 50% + groups ($MD = 38.33, p = .014$). The mean number of student transfers were higher in the 30-39% group compared to the <29% group. This implies that assigning a lower amount of credit in an articulation agreement may impact the number of students interested in following this pathway. However, it is interesting to note that this trend ceases to exist once the credit allowed is greater than 40%. Future research into this phenomenon has the potential to further explain this result.

For the C₃U₃ pair, percent of credit granted ranged from 30% to 43% and was therefore broken into two comparison groups (< 39% and 40% +). As there were only two comparison groups, a t-test was conducted to test for mean differences between the groups; the results were not significant.

GPA minimum. Many of the minimum GPA requirements listed in the articulation agreements were the same within institutions. For this reason, t-tests were conducted to determine if there was a mean difference in number of student transfers, based on whether or not the agreements identified a minimum GPA. As many of the minimums were the same across an institution's agreements, an analysis of the minimums themselves would not be meaningful. For the C₂U₂ pair, the mean number of student transfers through agreements that identified a GPA

minimum was $M = 13.24$, while the mean number of transfers through agreements that did not identify a GPA minimum was $M = 44.86$. The t-test conducted to compare these means was not significant; thus it cannot be established whether a significant difference exists in number of student transfers between agreements that identified a GPA minimum and those that did not. For the C_3U_3 pair, a t-test could not be conducted because all of their agreements included a GPA minimum, thus there was no comparable group.

Program delivery. Program delivery, specified whether the agreement included a bridge semester or was direct entry. For the C_2U_2 pair, the mean number of student transfers through programs including a bridge semester was $M = 19.74$, while the mean number of transfers through direct entry programs was $M = 21.10$. The t-test conducted to compare these means was not significant implying that there was no significant difference in number of student transfers between programs that included a bridge semester and those that were direct entry. For the C_3U_3 pair, a t-test could not be conducted because all of their agreements were direct entry.

Promotion. Promotion is defined as whether an agreement outlined how the institutions would promote the agreement to their students. This variable was used as a proxy for student awareness of an agreement. For the C_2U_2 pair, the mean number of student transfers through agreements that outlined promotion was $M = 14.11$, while the average number of transfers through agreements that did not outline promotion was $M = 28.46$. The t-test conducted to compare these means was not significant ($t = 1.03, p = .32, df [38, 13.86]$), meaning that there was not a significant difference in number of student transfers between programs that outlined promotion and those that did not. For the C_3U_3 pair, a t-test could not be conducted because all of their agreements outlined how the agreement would be promoted, thus there was nothing to compare this group to.

Key findings. Based on the C_2U_2 data, the only criteria that was significantly related to number of student transfers was percent of credit granted. None of the C_3U_3 criteria varied enough to allow for an analysis. The content analysis of the C_3U_3 agreements, indicated that all of the agreements that had been collected were signed in 2017. Due to the recent nature of these agreements, all of the agreements had a high level of homogeneity. This homogeneity may be a result of institutional efforts to ensure consistency through updating. If this were the case, it may not have been possible to examine the agreements as they existed for the students who took

advantage of them between the years of 2011 and 2015. As a result, these findings may not present a complete picture of how the inclusion of these criteria were related to number of student transfers.

Common Criteria for Articulation Development across Institutions

Tables 1 and 2 show that while there was some variation in the considerations that college and university interviewees deemed important for articulation development, it seems that key criteria for development were similar across institutions. The content analysis revealed that many of the same criteria were outlined, regardless of institutional pair. While conclusive data on the extent to which these variables were related to student uptake of specific agreements could not be deduced, there is evidence that these criteria are viewed as crucial to the development of an agreement across a variety of institutions. This was supported through both the interviews and an analysis of the agreements themselves.

Interestingly, some agreements included criteria that were unique to a specific institutional pair. Many of the C₃U₃ agreements specified “available spaces” as a potential reason for limiting student transfer. Although none of the agreements from the other institutions included guidelines for refusal or details outlining student caps, one interview revealed that institutions might be using other strategies to ensure that student enrolment does not exceed available resources. The interviewee revealed that adjustments to admission requirements such as minimum GPA make entry more competitive when there is an increase in student demand for transfer into a program eliminating the need for a formal cap. By reducing the number of students who qualify for an agreement, institutions are able to ensure that they only admit as many students as they are able to accommodate, rendering student caps and refusal guidelines unnecessary.

“They have GPA requirements in place so what they would adjust is the requirement. So for example, an articulation with [Institution 1] may have a lower GPA requirement than an articulation with [Institution 2], because [Institution 2] has fewer spots available. So, they never put a cap on the number, what they do is they up the requirements to get in if that happens.”

Additionally, C₁U₁ agreements included several unique criteria in order to accommodate for programs that operated via a shared delivery format. As part of these agreements, students transfer back and forth between the two institutions over the course of four years, meaning that a student's enrolment status at each institution changes multiple times while they complete their credentials. In order to accommodate for this, the C₁U₁ agreements outline institutional responsibilities to the student, as well as considerations related to eligibility for funding and sports team participation.

Interviews were important in yielding additional insights on criteria included in the articulations. For example, one of the institutions shared that they had begun incorporating a graduated GPA policy into their agreements. The graduated GPA policy determines the number of transfer credits to be granted to students based on their GPA, with students possessing higher GPAs receiving more credit upon transferring than students with lower GPAs. The interviewee stated that the purpose of this policy was to both "reward and attract higher caliber students to the program." The content analysis revealed that the considerations from this policy were not explicitly written into the formal articulation agreements, and only one interviewee from the institution mentioned the policy. This may imply that some members of the institution are not aware that such a policy exists. Similarly, if a policy is not clearly and explicitly articulated in the agreement, some students may not be aware that those options are available to them. More importantly, the exclusion of this policy from the formal documentation of the institution's agreements creates the possibility that other institutions may be operating agreements with the addition of policies that have not yet been documented in the formal articulation agreement. If this is the case, it is not possible to gain a holistic understanding of an institution's policies and practices related to credit transfer simply by observing their formal articulation agreements. The presence of formal documents that have not been updated to include all of an institution's transfer policies may also contribute to student confusion about the process of credit transfer.

Criteria for Keeping Articulation Agreements Current

The majority of the agreements examined for this study had a renewal date included in the formal documentation that specified when the institutional partners would review an agreement to determine if it required updating. A number of agreements also outlined the process to be followed if the updates were required before the formal renewal date. In most cases, the

procedure involved reporting program changes to the partner immediately so that a review could take place and the agreement could be updated if necessary. In order to determine the type of changes that would lead to the review of an agreement, interviewees were asked to explain the triggers for the evaluation of an articulation agreement (refer to Table 3).

Table 3: Evaluating Agreements

	College	University
Student Success Outcomes	2	5
Program Changes	2	3
Periodic Review	1	3
Ad-hoc Review	2	2
Uptake	2	1
Labor Market Viability	1	0

The most common responses for the type of changes that trigger the evaluation of an agreement outside of its formal renewal date were student success outcomes and program changes. However, despite program changes being mentioned during the interviews, and within the agreements themselves, as a trigger for the evaluation of an agreement, many interviewees revealed that limited communication between institutional partners can lead to program changes not being communicated. As a result, these updates are often not made to the formal agreements. In fact, almost all interviewees shared experiences about agreements not being properly reviewed and updated due to inadequate communication related to program changes. In many cases, unreported changes were often discovered when students had transferred and began struggling in their new program. Then, either as the result of student complaints or students failing courses, the agreement would be reviewed and updated. This finding supports the earlier emphasis placed on information sharing and assurance of program alignment.

“[Reviewing the agreements] should be happening far more often than it had because we found some schools had changed their legal course that they were taking so there was no longer alignment. [...] In theory, every time the program was changed we were supposed to be notified. In reality, that process is definitely still a work in progress and needed to get updated.”

Student success outcomes were referenced in a number of different fashions. These included the responsibility for tracking students for persistence and graduation, and

disseminating the data to teams that work with transfer students. Further emphasizing the need for close collaboration and communication, both college and university interviewees expressed a strong desire for access to data that would enable a close monitoring of transfer students. In particular, one interviewee expressed a desire for information sharing between partners on an annual basis to facilitate proactive discussions.

There was little variation between the institutional pairs. C₁U₁ saw overlap in the triggers for pathway evaluation, with the most significant overlap relating to student success outcomes such as students being unsuccessful in their post-transfer programs. C₂U₂ saw the least amount of overlap in responses to this question indicating a larger range of possible circumstances that would trigger the evaluation of a pathway.

Interviewees were asked to identify the steps that would be taken if an ad-hoc review determined that the articulation had become outdated. A number of interviewees indicated that the process would be similar to a scheduled renewal meeting. The institutional stakeholders who had initially been involved in determining program alignment and mapping courses (often faculty members or program coordinators) would meet to review course outlines and redo the course mapping.

One interesting finding related to the maintenance of articulation agreements was that whether agreements are formally or informally updated is based on the type of change that occurred. For example, during the interviews it was indicated that only major program changes, such as a change in the courses offered as part of either credential, would result in the agreement being re-written immediately. However, in the case of non-curricular changes, such as alterations to a program name, the change may be updated in the online system but not formally written into the documentation until the next renewal period. In this way, modified agreements could be offered to students without a formal re-write of the documentation occurring, helping to save institutional time and resources.

Availability of Student Usage Data of Articulation Agreements

One major limitation in determining student usage of the collected articulation agreements was that the majority of institutions were unable to indicate definitively whether a student had transferred through a formal articulation agreement. Instead, each university

provided data for incoming transfer students from the partner institution between the years of 2011 and 2015. An assumption was made that any student who had transferred between programs where an articulation agreement existed (as determined by the articulation agreement documents received from each institution) had transferred under that agreement. As such, the usage numbers reported represent only what can be inferred from the data set received, and may not accurately reflect the full number or scope of transfers occurring at each institution. This information is presented in Table 4.

Table 4: Total Number of Student Transfers

Year	Total Number of Students	C ₁ U ₁	C ₂ U ₂	C ₃ U ₃
2011	418 (100.0%)	100 (29.3%)	179 (42.8%)	139 (33.3%)
2012	477 (100.0%)	103 (21.6%)	195 (40.9%)	179 (37.5%)
2013	427 (100.0%)	73 (17.1%)	167 (39.1%)	187 (43.8%)
2014	416 (100.0%)	72 (17.3%)	191 (45.9%)	153 (36.8%)
2015	446 (100.0%)	80 (17.9%)	177 (39.7%)	189 (42.4%)
Total	2,184 (100.0%)	428 (19.0%)	909 (42.0%)	847 (39.0%)

In total, there were 2,184 student transfers between all of the institutional pairs for the years of 2011 through 2015, with 2012 having the largest number of student transfers overall. To track the movement of these students, student transfer data was used to populate the agreements available at each institution. It should be noted that among the partners, C₂U₂ and C₃U₃ had the greatest number of student transfers overall, roughly twice as many transfers as C₁U₁. Across the pairs student transfer has been relatively stable in the 5 years of data reported.

For the purpose of the following analyses, articulated agreements were classified as agreements where there was formal documentation outlining student movement from one program to the other. Non-articulated agreements outlined student movement between programs where no formal documentation existed, including block transfer agreements. Retention was determined based on whether a student was enrolled in the same program two years after their

initial enrolment, but whether they were progressing through each semester as intended was not considered.

In total, there were 281 articulation agreements operating between all of the institutional pairs (refer to Table 5), leading into 91 destination programs. To determine if student usage trends were different based on institution size, the data were further separated by institutional pair. These analyses examined trends in student usage of articulated verses non-articulated agreements, as well as retention data. Student demographic data was not collected, and thus trends based on demographic information are not discussed below.

Table 5: Total Number of Agreements and Destination Programs

	Number of Agreements	Number of Destination Programs
C₁U₁	18 (6.5%)	7 (7.6%)
C₂U₂	49 (17.4%)	14 (15.3%)
C₃U₃	214 (76.1%)	70 (77.1%)
Total	281 (100.0%)	91 (100.0%)

C₁U₁ Institutional Pair. For the C₁U₁ pair, a total of 18 articulation agreements were reported. Across these agreements, there were a total of 7 unique destination programs. Between the years of 2011 and 2015, there were a total of 428 student transfers between these institutions. Unfortunately, this institutional pairing was unable to provide information on the specific college programs the incoming university transfer students had previously completed. Thus, it was not possible to use student data to determine the usage trends of specific articulation agreements.

Table 6: C₂U₂ Number of Student Transfers by Year

	Total	Articulated			Non-Articulated		
		Total (A)	Retained After 2 Years	Not Enrolled After 2 Years	Total (NA)	Retained After 2 Years	Not Enrolled After 2 Years
2011	179 (20.0%)	151 (84.0%)	138 (91.0%)	13 (9.0%)	28 (16.0%)	14 (50.0%)	14 (50.0%)
2012	195 (21.0%)	161 (83.0%)	133 (83.0%)	28 (17.0%)	34 (17.0%)	25 (74.0%)	9 (26.0%)
2013	167 (18.0%)	148 (89.0%)	124 (84.0%)	24 (16.0%)	19 (11.0%)	18 (95.0%)	1 (5.0%)
2014	191 (21.0%)	158 (83.0%)	135 (85.0%)	23 (15.0%)	33 (17.0%)	26 (79.0%)	7 (21.0%)
2015	177 (20.0%)	133 (75.0%)	N/A	N/A	44 (25.0%)	N/A	N/A
Total	909 (100.0%)	751 (83.0%)	530 (85.7%)	88 (14.3%)	158 (17.0%)	83 (72.8%)	31 (27.2%)

For the C₂U₂ pair, a total of 49 articulation agreements were examined. Across these agreements, there were a total of 14 unique destination programs. Student usage of these agreements was examined for the years between 2011 and 2015; as such, there is no data on graduation or retention after two years for students who transferred in 2015. During this time, there were a total of 943 student transfers between these institutions. In total, 34 students were removed from analysis because their college program could not be determined. After exclusions, 909 students out of 943 were remained. Table 6 presents the total number of students across five years as well as the retention rates after two years.

The majority (83%) of student transfers between the C₂U₂ pair occurred through articulated agreements, rather than through non-articulated pathways. Overall, students were more likely to be retained after two years if they had transferred through an articulated, rather than a non-articulated, pathway (85.7% compared to 72.8%). In contrast, students who had transferred through non-articulated pathways were more likely than those who used articulated agreements to have left their program after two years (27.2% compared to 14.3%).

Table 7: C₃U₃ Number of Student Transfers by Year

	Total	Articulated			Non-Articulated		
		Total (A)	Retained After 2 Years	Not Enrolled After 2 Years	Total (NA)	Retained After 2 Years	Not Enrolled After 2 Years
2011	139 (17.0%)	57 (41.0%)	39 (68.0%)	18 (32.0%)	82 (59.0%)	57 (70.0%)	25 (30.0%)
2012	179 (21.0%)	63 (35.0%)	42 (67.0%)	21 (33.0%)	116 (65.0%)	79 (68.0%)	37 (32.0%)
2013	187 (22.0%)	63 (34.0%)	39 (62.0%)	24 (38.0%)	124 (66.0%)	89 (72.0%)	35 (28.0%)
2014	153 (18.0%)	55 (36.0%)	42 (76.0%)	13 (24.0%)	98 (64.0%)	63 (64.0%)	35 (36.0%)
2015	189 (22.0%)	70 (37.0%)	N/A	N/A	119 (63.0%)	N/A	N/A
Total	847 (100.0%)	308 (36.4%)	162 (68.0%)	76 (32.0%)	539 (63.6%)	288 (69.0%)	132 (31.0%)

For the C₃U₃ pair, a total of 214 articulation agreements were examined. Across these agreements, there were a total of 70 unique destination programs. For the purpose of analysis, programs with articulations into both BA and BA(hons) degrees in the same program were combined, since it was not possible to tell which degree the student had actually transferred into. In order to merge the agreements, all students who used either the BA or BA(hons) agreement were counted as having transferred through the BA(hons) agreement. After merging, there were a total of 146 agreements with 57 unique destination programs. Student usage of these agreements was examined for the years between 2011 and 2015; as such, there is no data on retention after two years for students who transferred in 2015. During this time, there were a total of 847 student transfers between these institutions. Table 7 breaks down student usage of these pathways by year.

The majority (63.6%) of student transfers between the C₃U₃ pair occurred through non-articulated pathways, rather than articulated agreements. Overall, students who transferred through articulated agreements and non-articulated pathways were approximately equally as likely to still be enrolled in their program, or to have left their program, after two years. There was a slightly higher chance of students from non-articulated pathways still being enrolled in their program after two years (69% compared to 68%), and for students from articulated agreements to have left their program after two years (32% compared to 31%). It is important to

note that this definition of retention also excludes students who are still enrolled at a receiving institution but in a different program than they transferred into.

Unused agreements. One sentiment that was repeated in a number of the interviews was the belief that articulation agreements hold value beyond their purpose as tools for facilitating student transfer. Specifically, articulation agreements were seen as adding perceived value to a credential by linking college programs with respected university programs, and as tools for prospective college students to negotiate with their parents. A number of the college interviewees mentioned that students and their families often believe that a university degree should be the goal of all post-secondary studies. These interviewees argued that having a list of available articulations could help students successfully negotiate a pathway to degree attainment at a university through a college program.

The perceived value of articulation agreements beyond their function of facilitating student transfer may help to explain the reasons that agreements remain operating even when students are not using them for transfer purposes. While missing student transfer data did not allow the research team to populate specific

articulation agreements with student usage data for the C₁U₁ pair, the data did allow for a determination of how many of the agreements at the other pairs went unused between the years of 2011 and 2015. Of the 49 agreements offered between the C₂U₂ institutions, 11 agreements (22%) were unused between 2011 and 2015; while 120 out of 146 of the articulations (82%) between the C₃U₃ institutions were unused. This discrepancy may be partially explained by the large number of block transfer agreements available between the C₃U₃ pair, potentially showing that students prefer block transfers over articulation agreements when given the choice.

Since articulation agreements were perceived to hold value even when they are not being used, the notion of terminating agreements with lower use was widely rejected by interviewees. Instead, unused articulation agreements often revert to being credit minimums at the time of their

“So if they’re having a conversation with their parents and they want to enter graphic design or animation or public relations or journalism at [Institution] and their parents are pushing them to get a credential of choice - which is a degree - they can say, ‘Well, you know what, why don’t I do this because it’s what I want to do and what I’d be good at, and I can always move to a degree. And here are the conditions under which I can move to a degree and here are my choices.’”

expiry, rather than being shut down altogether. Credit minimums imply that although the formal document would no longer be operating, the agreement may still be used as a guideline for the number of credits to be granted to students with similar credentials upon transfer. Credit minimums were especially helpful for facilitating student transfer between programs where an articulation does not exist that have similar learning outcomes to sending programs where an articulation does exist. For example, an agreement between a paralegal diploma and a law studies degree may act as a guideline for how much credit to give an incoming law clerk student, if an agreement did not already exist between the law clerk diploma and the legal studies degree.

Trends for Student Retention and Graduation

As part of the student data request, all three universities were able to provide longitudinal data for their transfer students. Analysis of this data indicated that among C₂U₂ students, those who moved through articulated agreements were more likely to be retained, and less likely to have left their program, after two years than students who had moved through non-articulated pathways. Among C₃U₃ students those who moved through non-articulated pathways were more likely to be retained, and less likely to have left their program, after two years than students who had moved through articulated agreements.

Despite the longitudinal data being made available when requested, the responses of interviewees varied when asked whether their institution tracked markers of student success (such as retention or graduation rates) for transfer students. Variation in the responses of interviewees indicates a lack of awareness on transfer data practices at the institution. The lack of active tracking of retention or graduation data for transfer cohorts was attributed to resource constraint by the interviewees.

However there was significant interest in monitoring the retention and graduation rates of transfer students. Some other common responses indicated that the interviewees believed the data was being tracked, even though they had not seen the data themselves. During the college interviews, interviewees often mentioned that unless they consistently asked their university partners for updates on the success of their students, the updates were not given to them. Although interviewees attributed this to poor

“Unless we seek it out, we don’t often get [updates] from the institutions that we send students to.”

communication between institutional partners, university responses about how this data is tracked may indicate that these updates are not given because the information is not monitored at the level it is being requested from.

At the partner level there was significant overlap between responses from C₁U₁ and C₂U₂. C₁U₁ interviewees both indicated that retention for transfer students was either tracked by the registrar's office, or they were unsure whether this data was being tracked at all. Similarly, C₂U₂ interviewees indicated that retention data was not available at the faculty/school level, or that the extent to which this data was available depended on the relationship between the stakeholders. There was less overlap in responses to this question from C₃U₃ interviewees. The diverse set of responses to this question may indicate some confusion about the extent to which this data was available to the respondents interviewed.

As previously mentioned, an analysis of student transfer data (including retention and graduation) from the C₁U₁ pair was not possible due to an inability to determine which of their students had used formal articulation agreements. The fact that the majority of the institutions from whom student data was requested could not identify which transfer students had used formal agreements, let alone which specific agreement they had used, hinted at some gaps in the way data is recorded for transfer students. In general, the responses that interviewees gave to this question showed a lack of certainty from both college and university staff about whether the data was tracked at all, and if so, who would have access to it. The lack of communication between colleges and universities in this area may be the result of data on retention and graduation for transfer students not being easily identifiable or accessible.

Where data was shared between institutions, the information was often anecdotal and occurred only between institutions where the relationship was especially close. In a few cases, interviewees described partner institutions where their departments had a particularly good working relationship as those most likely to provide updates on student success post-transfer. This is to be expected since institutions with relationships where there is little communication would not have the same opportunity to provide feedback as a pair of institutions

“So that would be dependent on the relationships that we have. I would say with the relationship with [Partner Institution], we did that on a regular basis [...] we would meet once or twice a year.”

where there is constant communication. This again supports the argument that the relationship between institutions is a key determinant in the successful development and maintenance of articulation agreements.

A consistent finding across interviews was that the data on student success did not make it back to the primary stakeholders involved in developing articulation agreements. Data

“If [retention and graduation] are tracked at the registrarial level, I don’t think that information has sort of to date really been shared that broadly.”

accessibility was identified as a key barrier across stakeholder roles and classifications. Interviewees believed that better access to data would contribute to developing more effective agreements. A number of interviewees indicated that access to data on the success of their students would help make them aware of problems with their articulation agreements so that changes and updates could be made to benefit future students.

SECTION V: CONCLUSIONS AND RECOMMENDATIONS

This study represents a first in the study of student transfer by examining the institutional perspectives on articulation and transfer. A number of important findings emerged from this project including the common goals among college and university partners. Understanding the common interests shared by institutional partners has the potential to improve the student transfer process by placing greater emphasis on the shared interests of each partner. Additionally, this was the first time that the various triggers for evaluating a pathway have been considered in the literature on student transfer. A better understanding of these triggers for the evaluation of agreements has the potential to inform a more consistent and standardized approach to making changes to the articulation agreements that govern student transfer. Understanding that articulation agreements undergo evaluation as part of renewal processes and as part of exercises to ensure the ongoing success of students, it also becomes important to understand the specific rationale behind the creation of these agreements. Through the interviews conducted, this rationale was examined and has the potential to enable a more informed examination of the efficacy of articulation agreements.

The key finding of this study is that there is room for improvement when it comes to the development and maintenance of articulation agreements. There are a number of gaps in the way student transfer data is recorded and monitored. These limitations restricted the analysis of institutional policies and practices related to the development, maintenance, and operation of articulation agreements. Specifically, most institutions do not maintain explicit records of students who had transferred using an official articulation agreement. Additionally, there were gaps in the data needed to determine which program a student had come from or which level of a program they had transferred into (e.g., BA versus BA(hons)). This meant that in many cases it was not possible to assess student usage of specific articulation agreements. Despite this gap in the study, the findings revealed some high-level trends related to the development and maintenance of articulation agreements. These findings, and the resulting recommendations, are further explained below.

Communication between Institutional Partners

One theme that seemed to emerge consistently was the importance the relationship between institutional partners. Regardless of what question was asked, one of the most common

answers was, “It depends on the relationship between the institutions.” This highlighted the importance of a strong working relationship in all aspects of developing, implementing, and maintaining articulation agreements. Foundations for a strong institutional relationship emerged in a variety of ways.

On the contrary, having a relationship characterized as less than ideal could obstruct the process of articulation development altogether. Where a set of administrators do not work well together there is less motivation to develop agreements between their respective institutions. This often resulted in agreements either not being developed, or agreements becoming outdated and suboptimal in supporting student transfer. One final potential source that may frustrate the ongoing communication and relationship building between institutions at the program level is the rotation of incumbents in faculty/program level administrative roles every three to five years. This supports the case for developing and maintaining formal documentation related to institutional polities on student transfer so that knowledge is not lost when the position is vacated.

One strategy that was used to increase communication between institutions was to reach out to all institutional partners every spring, rather than waiting for the agreement’s renewal date, to ensure that active agreements remain current. As part of this process, the designated office would send a summary of the content of their agreements to their institutional partners, along with any changes they had made to their programs, and then ask if the partner had made any changes to their program. This practice was viewed as an invaluable tool for building institutional relationships and ensuring that the maintenance of agreements occurred proactively. Despite a number of other interviewees expressing a desire for a similarly frequent level of contact with their institutional partners, this strategy was only referenced once.

Updating Formal Articulation Documents

Another important finding of this study was that institutions with recently updated articulation agreements were less likely to show variation in how those agreements operated. In contrast, institutions with agreements of differing ages showed variation in the criteria included in their formal articulation documents. This provides evidence that as institutions are updating their agreements, there is a natural inclination to make them more consistent with one another. In

fact, even collected agreements that were different in their formal documentation may be operating similarly to each other at the department level. As mentioned previously, non-curricular program changes would typically only result in department-level updates to articulation agreements. These changes would be updated in an institution's online system so that students could effectively move through the agreement, but would not be formally updated in the articulation documents until the next renewal period. Handling updates in this way is a benefit to institutions, as formally re-writing an articulation every time a course name changes would be an unnecessary drain on the resources involved in maintaining agreements. However, despite interviewees reporting that major changes should result in articulation documents being updated before their renewal period, there seems to be evidence that even major changes to available articulation agreements are only being updated at the department level.

Data collected for this project provided evidence that at least one pair of institutions were operating agreements in a fashion different from their formally documented agreements. More specifically, large numbers of students were moving from a college program to a university program where no articulation was available, but these transfers looked almost identical to transfers between similar programs where an articulation was available. A challenge with this approach is that despite it allowing for efficient movement among students who had taken advantage of these agreements, without formal documentation many students may not know that this pathway is available to them. We mentioned above that students have requested consistency between institutions in terms of articulation offerings (Durham College, 2016), and that applies within institutions as well. In order to ensure consistency and equal opportunity for all students interested in student transfer, it would be beneficial for all of an institution's agreements to be formally documented. Additionally, updated policies such as the graduated GPA should make it into formal articulation documents to ensure that administrators and students are being made aware of them.

RECOMMENDATIONS

The recommendations made based on this research have been divided into three categories: policy considerations, communication, and student success outcomes monitoring and are presented in the following section.

Policy Considerations

This study found limited awareness of the formal documentation process and its accessibility at both the college and university partners. In the absence of formal articulation development guidelines, previous articulation agreements are used as templates for developing new agreements. The most commonly reported uses for previous agreements was as templates for negotiating agreements with new partners while maintaining consistency. Interviewees who felt they had strong templates often reported that the process of developing new agreements was easy, where others relayed that the process was often frustrating and time consuming.

Vision for articulations. It is recommended that institutions develop of a strategic vision statement that outlines specific goals and rationale for developing articulation agreements that will guide the creation of new agreements. It is recommended that these statements be shared to inform the process of maintaining agreements by clearly outlining each partner's expectations. This will further enable each institution to examine whether agreements are effective in achieving the purposes for which they were created. One challenge with monitoring agreements for effectiveness is the limited information available on the goals of these agreements. By clearly outlining the goals of articulation agreements, more effective monitoring can be undertaken. Further, this clear vision would enable a better understanding of the multiple purposes articulation agreements serve.

Formally document and outline the process for developing articulation agreements. This formal documentation should include the identification of the institutional departments and stakeholders who will be involved in the various stages of articulation development and outline their specific roles. This process document should also outline the stakeholders that will be responsible for key tasks such as program mapping. Clearly enunciated policy and procedures for articulation development would further standardize the articulation development process that was found to be varied and unique among the partner institutions.

Standardize documentation. The standardization of documentation will result in the creation of clear guidelines for the necessary criteria to include in the documentation of articulation agreements. The criteria that should be included are the number of credits granted to the transfer student, the minimum GPA requirements, and the physical resource considerations necessary to operate the agreement. Once a list of necessary criteria has been formalized, institutions should create a template for articulation development that streamlines the process of creating articulation agreements and to ensure consistency in the agreements developed.

To ensure consistency among the agreements available across an institution, agreements that were established prior to the template should be updated to reflect the newly established standards. Following the update, drafts of the previous agreements should be retained to ensure continuity of the transfer framework.

Updating agreements. Create guidelines to govern what changes require an agreement to be formally re-written, or updated informally and the process to be undertaken should these changes occur. Specifically, each institution should outline the individuals who will be responsible for reporting changes to their institutional partners. This designate should also be aware of the person at the partnering institution who should be contacted when changes are made to ensure that these changes will be communicated effectively and addressed appropriately.

Once changes have been made to a formal agreement, institutional designates will need to communicate the changes to administrators and faculty.

Communication of Transfer Information

Communication to students. Institutions should ensure that the formal documentation of their agreements includes all of the relevant considerations from policies relevant for student transfer. Additionally, a robust communication strategy should be established to ensure that information about transferring is being communicated to prospective transfer students in a consistent fashion.

Creating and maintaining a specific page on each institution's website that displays each articulation agreement and the relevant considerations from policies that govern student transfer would afford a consistent approach to communicating the available opportunities to prospective

students. Additionally this would enable the effective communication of changes to agreements to students and administrators alike.

Articulation repository. Program changes, including curriculum changes, may necessitate changes to the pre-requisites for the receiving program. It is recommended that an updated list of pre-requisites be maintained for each articulation agreement that is easily accessible to the various institutional stakeholders involved in the process of articulation development or maintenance. This repository will provide a longitudinal record of how an articulation has evolved over the years in its requirements as well as ensure that it serves as a resource for when other agreements experience program changes.

Student success data. Data on student success outcomes for transfer cohorts should be made available to the institutional stakeholders involved with developing and maintaining articulation agreements, at both college and university partners. This information should be shared between institutional partners on a regular basis, preferably annually. These yearly reviews will allow institutions to identify areas where students are struggling so that agreements can be updated to better meet the needs of their students post-transfer. In the event that students are struggling in a manner that requires changes to the agreement, institutions should have a policy in place outlining the next steps to be taken to effect this change.

Student Success Outcomes Monitoring

Data designate. Institutions should assign a designate or office the responsibility for monitoring student success outcomes for transfer cohorts. These outcomes would include retention, graduation, and continuation in alternative programs. Further, to enable the meaningful exchange of data between partnering institutions, data sharing agreements should be established to ensure that each institution is recording transfer data in a consistent fashion. An additional benefit of this designated responsibility would include the ability to share data with partners on an annual basis. Breakdowns in communication that currently inhibit this process may differ at the level of the faculty and administrator. Future research should seek to identify these differences and ways they can be mitigated to ensure that effective communication occurs.

Transfer student attributes. Transfer students should be monitored independently and as a group. By identifying incoming students that have transferred through the various articulation

agreements available, better information sharing would be enabled. Information such as whether an incoming student took advantage of an agreement, and the particular agreement they used for their transfer should be recorded. For agreements that outline movement between a variety of college and/or university programs, the specific sending and receiving programs should be recorded. Similarly, if an agreement is in place for both diploma and advanced diploma students transferring into a university program, the credential obtained and commensurate amount of credit granted should each be recorded. The receiving program should also be recorded to enable a holistic understanding of the outcomes for transfer students.

Student success outcomes. Institutions should monitor the progression of students post-transfer so that new agreements can be developed in areas of interest to students. In cases where students are making use of an articulation agreement to enable access to a university program where no formal pathway exists, the tracking of student movement post-transfer would help to understand this trend. For example, if police foundations students are transferring through a formal pathway into Criminology and then later changing programs to Psychology, understanding this post-transfer outcome could facilitate consideration for the development of a new pathway.

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APPENDICES

Appendix A: Interview Questions

1. Please describe some key criteria for undertaking the development of a formal pathway. If you have never developed a pathway, what criteria would you consider important?
 - i. Do the criteria you have listed vary depending on other variables, e.g. enrolment numbers, program area, etc?
 - ii. Are there additional (external factors) that affect the decision whether to develop a pathway?
2. Who is most likely to participate in a pathway development meeting?
 - i. What rationale determines the inclusion of institutional stakeholders?
3. What unique motivations underlie the goals of the various stakeholders who participate in the development of articulation agreements?
 - i. Do these vary depending on the program/faculty/individual?
4. What are some important considerations when formulating a pathway agreement?
 - a. What makes these considerations important?
 - b. Institution/program specific?
5. Does a formal process document (not with respect to compliance) exist for the development of an articulation agreement? If so, can you please discuss the content?
6. In what ways are current articulation agreements considered/referenced in the creation of new agreements?
7. Please describe the extent to which current agreements are monitored for retention/graduation.
 - a. Success (control for size of field)
 - i. Retention
 - ii. Graduation
 1. Account for early leavers due to job?
 2. Should it be persistence?
 - b. Relevance (in relation to?)
 - i. Validity
 - c. Effectiveness
 - i. Consultation/ follow-ups with partnering institution
 - d. Have you ever capped enrolment on an agreement
 - i. Regulated programs?
8. Thinking about the future of student success, what are some areas of opportunity/ growth/ change for current pathways or pathways under development?
 - a. Impact of degrees
 - b. Consultation with other non-partner institutions

- c. Certificate to degrees
 - d. Alternative pathways
 - e. Student interest groups
 - f. Metrics
 - g. Notion of sun setting
9. Please describe the events that would trigger the evaluation of a pathway.
- a. What steps are taken when it is determined that a pathway needs updating?
 - b. How does the operation of older agreements differ from their original documents?
10. Is there anything else that you would like to make clear about the construction/maintenance of pathways?

Appendix B: Student Data Request Template

When we requested student data from each of the participating universities, we sent out an Excel template that included headings for each of the variables we were collecting. For clarity, the second page of the Excel file defined each of the variables of interest as below.

- Student ID: Unique identifier for each student.
- College Program: The name of the program the student was enrolled in prior to their transfer.
- Transfer Pathway Used: Whether or not the student used an articulated transfer pathway; if so, which one they used.
- Name of Faculty: The name of the faculty that hosts the program the student transferred into.
- Year of Enrolment: The year the student began taking classes at your institution towards their credential.
- Program Name: The name of the program the student transferred into.
- Credential: The type of credential their post-transfer program would earn them.
- Enrolled After 2 Years: A yes or no acknowledgement of whether or not the student was still enrolled at the university after 2 years.
- Persistence by Program: The number of students in the post-transfer program at the end of each school year.

