



MEMORANDUM

To: Joint Education Interim Committee
Date: October 30, 2018
Subject: HEA0047 – 2018 Session

Background

The purpose of this memo is to satisfy the reporting requirement established by HEA0047 (2018 Budget Session). More specifically, the Community College Commission (WCCC), the seven community colleges and the University of Wyoming (UW) were directed to develop a common college transcript system – a system now referenced in W.S. 21-18-202 (a)(vi):

“The commission shall . . . (d)velop and maintain a common transcript system that uses common course numbering for all courses provided at the community colleges or the University of Wyoming. The system shall facilitate program planning and the transfer of students and course credits between the community colleges and the University of Wyoming. The development and ongoing maintenance of the statewide course numbering system, including determining course equivalencies, shall be accomplished with the assistance of appropriate committees that shall include faculty members and staff of the community colleges and the University of Wyoming.”

Section 2 of HEA0047 then specifies that this “report . . . establish a plan for development of an electronic transcript transfer system that allows each student information system to send and retrieve transcript data automatically . . .” Clarification of the term “electronic transcript transfer system” was initially sought from the Legislative Service Office, but in the absence of additional information regarding legislative intent, this clarification was derived from further conversations with committee members, and then ultimately confirmed by testimony given during the JEIC’s September 27 meeting.

Clarification was also sought from the Attorney General’s Office regarding the ability to share student transcript information with another postsecondary education institution when the student did not specifically make a request to share their information with that institution. The response received from the Attorney General’s Office indicated that sharing records for transfers among Wyoming institutions is within FERPA’s exceptions for disclosure without consent. This conclusion greatly simplifies a cumbersome and inefficient process currently available to only Hathaway Scholarship Program students, and it paves the way for sharing student-specific course listings for all students, not just Hathaway students.

Recommendations for Resources

Shortly after the 2018 Session, a workgroup was formed to consider options for satisfaction of HEA0047. This workgroup consisted of representatives from WCCC, the community colleges and UW. The representatives' areas of expertise included administration, information technology, academic affairs and student services. Resources needed for implementation of the practical aspects of HEA0047 were identified, researched, and then grouped into technical solutions, course equivalency and common course numbering solutions, and contracted services. These resource requests are presented in summary form here, and then later in the report, greater detail is provided along with narratives addressing the associated policy concerns.

- **Technical Solutions** - Of the four possible technical solutions identified, two are recommended (they are not mutually exclusive, but instead complementary):
 - \$202,000 in one-time costs for: (1) Colleague Trusted Link and (2) Banner EDI Smart - licensing, installation and training
 - \$34,000 in annual maintenance - subject to annual increases of 6 percent
 - \$9,000 in annual transcript transport fees
- **Course Equivalency and Common Course Numbering Solutions**
 - \$635,000 in one-time costs for electronic course catalog software and curriculum process management software - licensing and implementation
 - \$195,000 in annual maintenance - subject to assumed annual increases of 6 percent
 - \$66,000 in annual subscription fees for course transfer software-as-a-service (SAS) - subject to assumed annual increases of 6 percent
- **Contracted Services**
 - Year One - State Longitudinal Education Data System (SLEDS) Project Manager, Security Expert, Data Scientist and Database Administrator - \$470,000
 - Year Two - SLEDS Project Manager and Data Scientist - \$245,000
 - Recurring After Year One - SLEDS Security Expert - \$115,000

Section 2 of HEA0047 states that "(t)he system shall be developed by July 1, 2019." Given the scope of the implementation, and recognizing that the various solutions would have to be installed incrementally, college and UW information technology staff recommend a full implementation cycle of 36 months. This implementation timeframe is also partially attributable to work currently underway on the shared learning management system, the SLEDS and predictive analytics solutions. Possibilities exist for shortening this timeframe, but they would come in the form of increased costs for vendor programmers and consultants, or up-front funding of a needs analysis to ensure industry best practices and complete systems integration.

Possible Technical Solutions - Full Descriptions

Given the clarification received with regard to the technical sophistication of the "electronic transcript transfer system" referenced in HEA0047, there appear to be four possible solutions. The first two are included in the preceding recommendations, and the last two are provided as options, but are not recommended as viable solutions.

Recommended for Implementation:

Option 1A - Transcript Consumption - The seven community colleges' administrative computing system, Colleague, was developed by a company by the name of Datatel. UW's system, Banner, was developed by Sungard. In early 2012, the two companies merged to form Ellucian. Though the colleges retained Colleague and UW retained

Banner, integration between the two systems is not complete. Fortunately, similar functionality does exist for sharing transcripts. In simple terms, Banner's EDI Smart solution and Colleague's Trusted Link solution can "consume" or "ingest" transcript information from one another. This two-way functionality uses an electronic format called EDI, and it also requires use of a nationally recognized transcript vendor by the name of National Student Clearinghouse (NSC). It eliminates the need for data entry, but does not eliminate the need for transcript evaluation on the part of each institution's registrar. And in spite of the need for a transcript vendor, this should support not only in-state transfers, but also out-of-state transfers, and should also put the colleges and UW on a level playing field with institutions in other states. The costs associated with this solution are estimated at \$202,000 in one-time costs, and \$43,000 in recurring annual maintenance charges and transcript transport fees.

Option 1B - Extend SLEDS Capability to All Students - In satisfaction of federal obligations, WCCC has developed a State Longitudinal Education Data System (SLEDS). With the pending execution of a 10-party memorandum of understanding (MOU), the SLEDS will incorporate educational data from the state's K-12 system, the seven colleges and UW. It will also incorporate labor data for Wyoming, and hopefully in time, for other states as well. In effect, it will serve as the statewide hub for management and analytical reporting of data in support of educational outcomes. Realization of the SLEDS reflects an unprecedented level of inter-agency cooperation between WCCC, the seven colleges, UW, the Department of Education and the Department of Workforce Services. Given the capacity of the SLEDS' data warehouse, it is currently being used to generate student-specific course listings necessary to effectively administer the Hathaway Program across eight institutions, any combination of which can be found on a given student's complete course record. With the execution of the MOU mentioned above, this same capacity could be used to create a course listing for not only Hathaway students, but for all students. While all eight in-state institutions could accept this course data for their admissions processes, and it could be used to facilitate in-state transfers and "shared" enrollment (i.e., simultaneous enrollment in more than one institution by the same student), the obvious disadvantage to this approach is that data entry would still be required of all eight institutions, compounded by any time necessary for review by registrars. Given the fact that this system's infrastructure is already fully developed, its "no-cost" functionality truly complements the automated transcript consumption solution described above by providing a systemwide resource for advising students who are considering transfers.

Not Recommended for Implementation:

Option 2 - Student Specific Course List - Though not fully researched yet, a process similar to that for K-12 districts in Wyoming could be implemented. In essence, all eight postsecondary institutions could provide transcript data to a contractor, and that contractor could generate an official student-specific course listing reflecting enrollment across all eight institutions. The disadvantages to such an approach include the costs associated with using a private contractor, the continued reliance on data entry, the recognition that the result would be a statewide course listing but not an official transcript, and the fact that students would have to initiate it. The advantage, on the other hand, is that - like Option 1A - this could potentially support not only in-state transfers, but also out-of-state transfers. This solution was not recommended by the workgroup.

Option 3 - Optical Character Recognition - The final solution would also use contracted technology - technology commonly known as optical character recognition (OCR) or "screen-scraping." It would entail development of templates to match each of the eight postsecondary institutions' transcript formats. Transcripts in PDF format would

then be compared to the templates, and pertinent information could then be uploaded into both Colleague and Banner. OCR is by no means new technology, and its disadvantages include cost, and heavy reliance on transcript forms and therefore templates that would require continuous updating as transcript formats change over time. Data entry could be avoided in large part, but reconciliation of outliers would still be necessary, and system maintenance would be significant. It eliminates the need for data entry, but does not eliminate the need for transcript evaluation on the part of registrars. One advantage, on the other hand, is that - like Option 1A - this could potentially support not only in-state transfers, but also out-of-state transfers. This solution was not recommended by the workgroup.

Course Equivalencies and Common Course Numbering

Faculty from all seven community colleges and UW meet annually in articulation conferences to collaboratively update curriculum, ensuring that similar courses remain equivalent. The resulting articulation agreements (of which there are nearly 200) support transferable degree programs through common course objectives, descriptions, prerequisites and outcomes. In addition, all eight institutions already have a common course numbering system in place for transfer courses. Though recognized among the colleges, career-technical education courses generally do not transfer to UW. For example, welding, diesel technology, and auto mechanics courses at a college are not accepted by UW simply because it does not offer programs in these career-technical education (CTE) disciplines. There are a few exceptions to this with respect to the Bachelor of Applied Science (BAS) degree offered by UW.

Offering greater perspective on these relatively broad and ongoing initiatives, the common course numbering procedures adopted by the colleges and UW have been revised, with new freshman and sophomore common course policies being implemented on July 1, 2018. Common course numbering is an ongoing process requiring the interaction of UW, the colleges and WCCC. The retooled Wyoming Common Course Numbering Procedures Manual is the product of a workgroup co-chaired by the UW Registrar and the WCCC Chief Academic and Student Services Officer, and its other members included academic affairs and student services vice presidents, financial aid directors, college registrars, common course coordinators, WCCC staff members, and academic deans. Procedural revisions are consistent with the guidance provided by W.S. 21-18-202 (a)(xvii), and the corresponding policies were vetted by both the WCCC Academic Affairs and Student Services Councils before final approval by the WCCC Executive Director.

In spite of these policy efforts, there have been, and continue to be instances in which common course transfers are problematic. Though obviously the preference would be to eliminate these instances entirely, minimizing them through both technical solutions and shared policy is paramount. In consideration of this, one needs to acknowledge that there is still an essential faculty component – the “curriculum ownership and instructional design” component of both community college and UW faculty (which is a required practice as part of institutional accreditation by the Higher Learning Commission). There are bound to be emerging course differences due to new technologies, employer skill set requirements, evolution of the profession for which a program prepares students, faculty judgements, or advisory committee input - all of which can change course equivalencies between institutions or articulated programs. A theoretical example of Art 1234 provides clarity to curriculum ownership:

UW and the colleges all offer Art 1234 as a program requirement in an articulated 2+2 program and in an Associate of Arts (AS). It could be assumed that courses are equivalent, when in fact they may have significantly different learning outcomes in course content. (For example, due to including/omitting a graphic art technique learning outcome in the AS curriculum.) This course is no longer equivalent, and needs to be replaced by a new course with a new course number for

one of the programs resulting in two different courses. Consequently, the 2+2 program agreement would require revision.

This example merely reinforces the inherent complexity in establishing course equivalencies. Curriculum needs to be dynamic. The application of common course numbering must be responsive and must alert students when requirements of a program change. This ongoing common course numbering process will benefit from a technical solution coupled with an increased level of support and involvement by senior college and university administration with respect to agreed-upon course curricula policy and consistent course numbering.

Research on the part of workgroup members found that there are additional technical solutions that could significantly aid in this ongoing effort to maximize course equivalencies and facilitate common course numbering as a means of making student transfers as seamless as possible. Following are brief descriptions of these additional technical solutions:

- **Electronic Course Catalog Software** – Five of the eight postsecondary institutions already have electronic course catalogs. These promote a consistent student experience from institution to institution, as well as statewide course availability with searchable educational opportunities. It does not appear that all would have to have the same software to provide data necessary to determine course equivalencies.
- **Course Transfer Software** – This software provides a common database for identifying and reconciling differences in curricula elements of courses with common course numbering. Most of the colleges already subscribe to the software necessary to do this within Wyoming. The other software could provide the same functionality for students considering transfers from other states. Students would have both inquiry and reporting access. The costs associated with this solution are estimated at \$66,000 in recurring annual subscription fees.
- **Curriculum Process Management Software** – This software facilitates and ensures consistency in curricula development among institutions, thereby streamlining the student transfer process. By doing so, it also facilitates “reverse transfer” by students (i.e., recognition of students who complete associate degree requirements after enrolling at UW). And finally, by providing progress information to students, advisors and faculty, it can also significantly reduce student time-to-degree and time-to-certificate completion. The costs associated with this solution, in conjunction with electronic course catalog software, are estimated at \$635,000 in one-time costs, and \$195,000 in recurring annual maintenance charges.

Progress Toward Legislative Expectations and Recommendations for Contracted Resources

As presented to the JEIC during its September 27 meeting, implementation of the changes called for by HEA0047 represent a combination of ongoing initiatives and proposed solutions. Paramount among the ongoing initiatives is the aforementioned 10-party MOU creating an unprecedented partnership between the seven community colleges, UW, WCCC and the Department of Education. Of equal significance is the SLEDS developed in support of this partnership. As indicated in technical solution Option 1B presented above, the SLEDS plays a crucial role in not only complementary satisfaction of HEA0047 objectives, but also analysis of educational outcomes in support of ENDOW initiatives and Governor Mead’s two executive orders regarding educational attainment. The fact that these initiatives are linked together should come as no surprise. Given that 75 percent of 2018 UW graduates are community colleges transfers, improving the transfer process itself can only increase student success. In turn, increased student success feeds greater educational attainment, and greater attainment supports economic diversification. In support of these necessary changes, initiatives and goals, WCCC has

identified four contracted positions necessary to fully realize the capacity of the SLEDS – capacity that recognizes and incorporates data governance protocols not only needed to facilitate data sharing and transparency, but also to ensure data security and compliance with all applicable federal and state mandates. Following are brief descriptions of these four contracted positions:

- The SLEDS **Project Manager** will be a contracted consultant starting immediately with a contract term of two years (\$230,000 General Fund). In accordance with HEA0047, the Project Manager will have primary responsibility for development of a Wyoming course listing and reconciled course catalogs in support of student transfers with UW and among the colleges. The Project Manager will also coordinate SLEDS meetings, oversee the data governance process, create system documentation, and ensure compliance with FERPA. If approved, the Project Manager will also assist the SLEDS Security Expert (see following proposed position).
- The SLEDS **Security Expert** will be a contracted consultant starting immediately with a contract term of one year (\$115,000 General Fund), followed by a 2021-2022 request for a permanent, full-time employee classified as a CTBA10. The Security Expert will have primary responsibility for security of all data submitted to the SLEDS, regardless of the entity where the data originated. This relatively broad responsibility will lead to creation of a statewide security team in support of any entity participating in the SLEDS. Recognizing this potential for benefits derived by multiple entities, there may be future opportunity for cost sharing of the position's salary and benefits. Enterprise Technology Services is aware of this initiative, and is supportive of it.
- The SLEDS **Data Scientist** will be a contracted consultant starting immediately with an initial contract term of two years (\$260,000 General Fund), followed by possible extensions dependent upon the demand for new analytical reporting in support of HEA0047, ENDOW initiatives and educational attainment goals.
- The SLEDS **Database Administrator** will be a contracted consultant with a contract term of one year (\$110,000 General Fund). The Database Administrator will have primary responsibility for the ETL (extract, transform and load) processes used to merge the high-volume data transfers from the seven colleges, the Department of Education, UW and the Department of Workforce Services. Once loaded, the shared data will be available to all entities participating in the SLEDS, and the Commission's reporting tools will also be available for use, subject to all data governance agreements and security protocols.

Thank you for the opportunity to provide this report, and also for the Committee's consideration of the HEA0047 workgroup's recommendations.