RESEARCH ARTICLE

Teacher Education Assessment Systems: State-Wide Changes Over Ten Years

George Nickles[1], C. Dale Carpenter[2]

[1,2] *Western Carolina University*

Assessment of teacher education could not be done without an organized infrastructure of personnel and software. This study surveyed educator preparation programs (EPPs) across North Carolina about their infrastructure and needs. The results are compared to a similar survey conducted in the same state ten years ago to identify changes over time. Several findings emerged. Personnel leading assessment efforts in EPPs have assessment as only one of several other job duties they perform. A variety of assessment management systems (AMSs) are used across institutions, with most in use for over a decade. EPPs tend to use their AMS to collect student artifacts and enable the evaluations of those artifacts, then export this data to other software for analysis and reporting. The primary need in assessment systems is (and has been for some time) additional personnel resources. Implications of these for both EPPs and AMS vendors are discussed.

Keywords: assessment management system, teacher education, data reporting

Requirements to assess teacher education programs come from several sources. Regional accreditors require institutions of higher education to have an effective system of continuous improvement - essentially to assess and improve academic programs. As one example, Section 7 of the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) requirements calls for institutions to have an "ongoing, comprehensive, and integrated research-based" process to evaluate student learning and improve this outcome (Southern Association of Colleges and Schools Commission on Colleges, 2018). Such a system at a modern university is more effective with digital technology to gather and analyze data at the program level, then systematically report to a central monitoring office.

Standard R5.1 of the Initial-Level standards of the Council for the Accreditation of Educator Preparation (CAEP) indicates that Educator Preparation Programs (EPPs) must have a

system of data collection and reporting (Council for the Accreditation of Educator Preparation, 2022). Educator Preparation Programs refers to any program that prepares individuals to become licensed K-12 teachers, such as teacher education degree programs offered by many universities. The same standards require disaggregation of data by demographic information and individual program for analysis. As with regional accreditation, these program accreditation requirements are more efficiently carried out by digital technology.

Assuming EPPs must choose one or more software packages or online services to meet these needs, they should have some guidance. The literature provides some guides to this selection and references qualities such as usability, interoperability with other technical systems, security, data management, and support services (Isaias et al., 2017; Oakleaf et al., 2013). Not addressed explicitly are patterns of assessment management system (AMS) adoption by peers. Because certain groups of peer EPPs, such as all EPPs in a US state, share common needs of reporting for accreditation and state approval processes, common data systems can afford many advantages. State governments may have standard requirements for program completion and data reporting, such as those in North Carolina (N.C.S.L. 2017-189, 2017). Thus, it may be prudent to consider what peer institutions in similar settings are using for their technology and if that system is functioning well within state and accreditor requirements.

If EPPs in a state are aware that multiple campuses are using the same software, those could join together in a consortium to adopt the same software. This may be even more feasible if these are connected by consortia or are in a public system such as the University of North Carolina (UNC). By joining together, these institutions by gain the benefits of scale in purchasing, adoption, and support. For this effort, the EPPs who are interested in collaboration need to be aware of what tools each institution is using for assessment. In addition, each EPP has its own local context for its assessment system, including program size, resource level, and local practices.

Whether managed jointly or by individual institutions, the data systems used are a core component of the full assessment process. Robertson and Larkin (2019) developed the Assessment System Maturity Matrix, a tool to evaluate the maturity and quality of an assessment process. Among the many items included is one on technology: "I3. Technology – Tools: How are tools used to manage the assessment system" (Robertson & Larking, p. 76) plus others that touch on data systems required. In addition, the Matrix includes items on the size and makeup of the team of personnel that manage and support the assessment process. While many other factors are noted regarding the process, these particular items reflect the resources needed and provided by the institution.

Corbin et al. (2013) surveyed EPPs in North Carolina to assess the capacity of educator preparation institutions in North Carolina to meet program approval and accreditation demands for data. Regarding personnel capacity, only 24% of EPP respondents indicated they had adequate or excellent personnel resources for the task of assessment. A variety of software systems were used from general-purpose business productivity software to a AMSs with TaskStream being the most used by 39% of respondents. Of the EPP respondents, 84% indicated their digital software was adequate or excellent for their assessment needs. The survey also showed some differences between types of institutions. Private institutions reported a higher need for computing resources than public institutions, and public institutions reported a higher need for faculty support for assessment work than private institutions.

Since Corbin et al. (2013) was published, there have been multiple changes in the program accreditation and regulatory landscape in the state since that time. The National Council for Accreditation of Teacher Education (NCATE) and the Teacher Education Accreditation Council

(TEAC) have fully integrated into a single entity: CAEP. The Association for Advancing Quality in Educator Preparation (AAQEP) has emerged as another federally approved national accreditor of teacher education programs. Various state requirements of EPPs have changed. The UNC System has initiated the Student Data Mart to collect data from the various campuses and report on teacher education collectively. Finally, the available assessment services have changed over this time. For example, three of the major AMS systems used in North Carolina EPPs (TaskStream, LiveText, and Tk20) merged to a single company (Watermark Insights) now offering one product stack for AMS. And like most software, AMSs will have received updates or new versions over a decade.

One study on similar topics to Corbin et al (2013) was conducted by Maarouf (2015). This study surveyed teacher education assessment professionals across the United States on how well their assessment systems and processes met accreditation standards and how adequate they were for those purposes. The researcher found an increasing adoption of AWSs by teacher education programs, indicating a shift to these purpose-made commercial systems over internally created systems or general business productivity software. In addition, the survey showed assessment professionals perceived their assessment systems and processes were less in compliance with the (relatively new) CAEP standards as opposed to the older NCATE accreditation standards. In contrast to Corbin et al. (2013), the survey results indicated that 68% of assessment professionals stated their software solutions were inadequate or minimally adequate to meet national accreditation requirements. It should be noted that the survey by Corbin et al. (2013) was published the same year as the founding of CAEP. Thus the survey by Maarouf (2015) may reflect the change in attitude due to this change in accrediting body.

In light of the ongoing state and national requirements for assessment systems and the changes in AMSs over the past ten years, we decided to conduct another survey to examine how these changes have impacted assessment systems in the state of North Carolina and the perceived satisfaction and needs. We wish to determine if the software and human resources for assessment have adequately kept pace with the external changes to institutions. The survey conducted by Corbin et al. (2013) serves as a comparison point for the technology in use and the sense of adequacy of resources. This paper will describe the use of and satisfaction with AMSs by EPPs in the state of North Carolina. It will also compare these results to those from ten years prior to identify similarities and changes between those snapshots.

METHODOLOGY

Subjects/Respondents

All fifty-four EPPs in North Carolina were surveyed regarding their assessment systems. The survey was created in the Qualtrics survey system and an anonymous link was created for responses. We identified the most likely person to know about the assessment system by consulting the websites of the EPPs and the membership of a state-wide assessment email listserv. If an individual was not identified as the primary contact for assessment, we used the main contact person identified by the North Carolina Department of Public Instruction (2022). Individuals identified were emailed with the anonymous Qualtrics link and asked to complete the survey or forward it to the person responsible for assessment. In addition, the link and call for participation was posted to the above-mentioned listserv. Twenty-one EPPs responded at least partially. Twelve

EPPs can be characterized as responding fully to all or nearly all questions (response rate: 22%). All twenty-one responses that were at least partial are included in the data presented.

Note that the fifty-four EPPs include six private for-profit organizations (that are not colleges or universities) and individual school districts. None of these responded to the survey. Of the 48 traditional private and public four-year institutions, 21 respondents represent 44%. Of these, 7 were public institutions and 14 were private. We requested that only one individual per EPP respond, and no two responses appeared to indicate the same institution. While this is not conclusive given the anonymous nature of the survey, we assume each entry represents an independent, individual rating from a single EPP.

Survey

The survey was based on the questions from the version administered in 2012 (Corbin et al., 2013). That survey asked about the nature of the EPP (public vs. private), adequacy of the technology for assessment and program review, specific technologies used and the length of time they have been used, and satisfaction with the current system.

For this survey, some questions were added, including asking about EPP accreditation status, average number of graduates in a year (to examine size), what unit supports the system, how the assessment system functions, and adequacy of various components of the assessment system. See Appendix A for a copy of the survey.

Planned Analysis

Corbin et al (2013) presented their survey findings largely in the form of frequencies and figures. As this study uses a similar survey and the data is generally ordinal, results will also be presented in the form of frequencies and figures. We will compare relative frequencies of reported results between the Corbin et al (2013) and the results of our survey. If the responding populations are similar, these comparisons should show accurate similarities and differences between the two snapshots.

RESULTS OF 2022 SURVEY

Characteristics of Responding EPPs

Of the responding EPPs, two-thirds (67%) are private or independent and one-third (33%) are public approximating the composition of NC EPPs (where 71% are independent and 29% are public).

The survey also asked about accreditation status. A bare majority, 52%, of responding EPPs have or are pursuing CAEP accreditation. For the rest, 10% have or are pursuing AAQEP accreditation, 14% are pursuing another agency, and 24% do not have accreditation. When considering all accreditation agencies, 76% of responding EPPs are pursuing accreditation in some way. While accreditation is pursued by many EPPs in the state, it is not required by the North

Carolina Department of Public Instruction which requires state "program approval" but not regional, national or other accreditation

To gauge the size of responding programs, we asked how many completers each EPP produces per year on average. This should give a sense of the production of new teachers and be a relative uniform measure across all EPPs. Results are seen in Figure 1. Most responding EPPs have less than fifty completers per year. Some are much larger. The four EPPs that produce the most completers are all public universities. This pattern is similar to that of all EPPs in the state in the year this data was collected seen in Figure 2, based on data from the North Carolina Department of Public Instruction (2024).
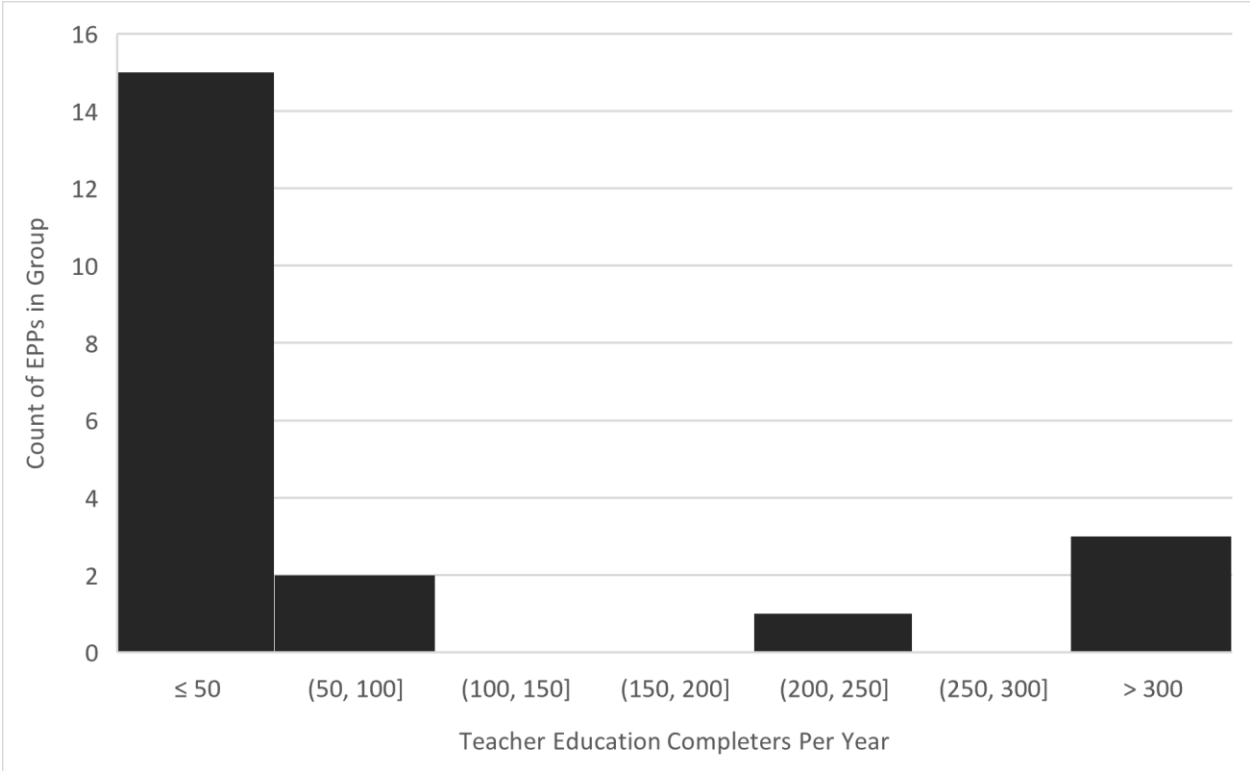

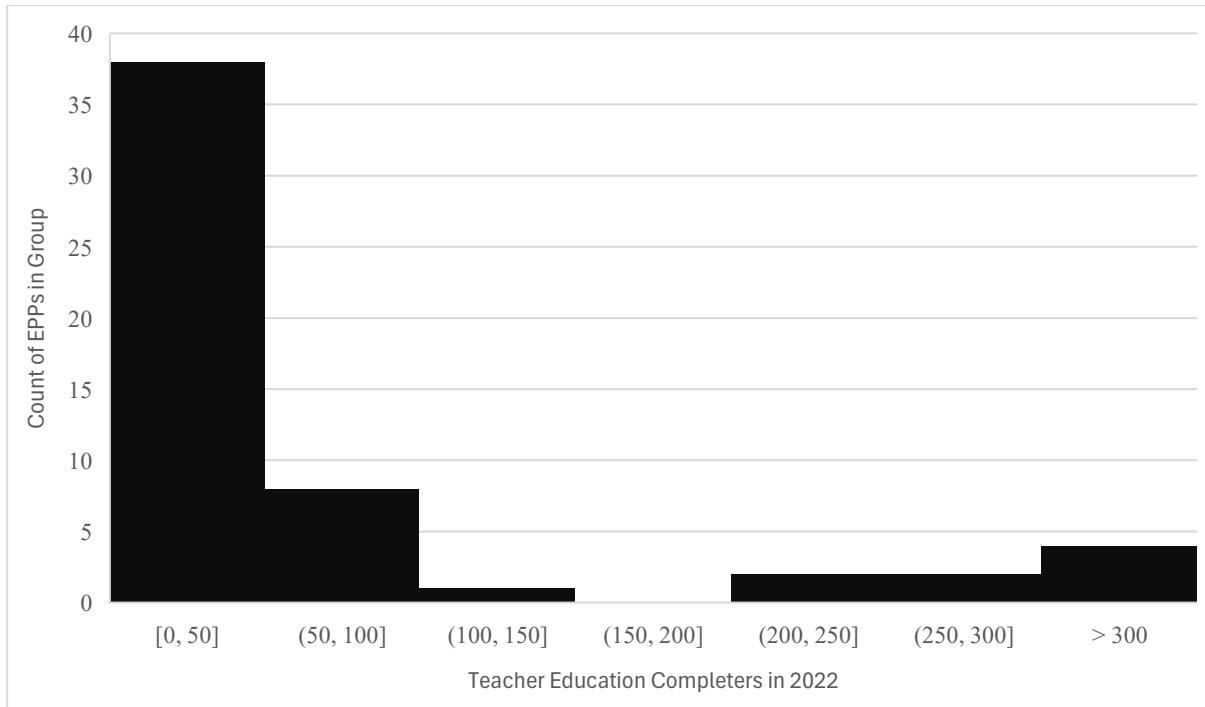*Figure 1*. Histogram of EPP Completers Per Year for Survey Respondents

Figure 2. Histogram of EPP Completers Per Year for All EPPs in 2022.

Assessment Personnel

Individuals who are leaders for assessment reported a variety of job roles. Most are academic administrators in their units (62%), implying that assessment is one of multiple duties expected in the position. Assessment coordinators or directors made up 24% of respondents. The reminder were either faculty (9%) or other (5%). No individual who identified as an administrator reported dedicating more than 60% of working time to assessment. The percentage of time the assessment leader reports dedicating to assessment is widely varied (Figure 3). Most of the respondents dedicate 60% or less of their time to assessment. A majority of assessment leaders consider the personnel resources dedicated to assessment by the EPP to be minimally able to meet current demands (63%), with 32% reporting they are adequate and 5% reporting they are inadequate.
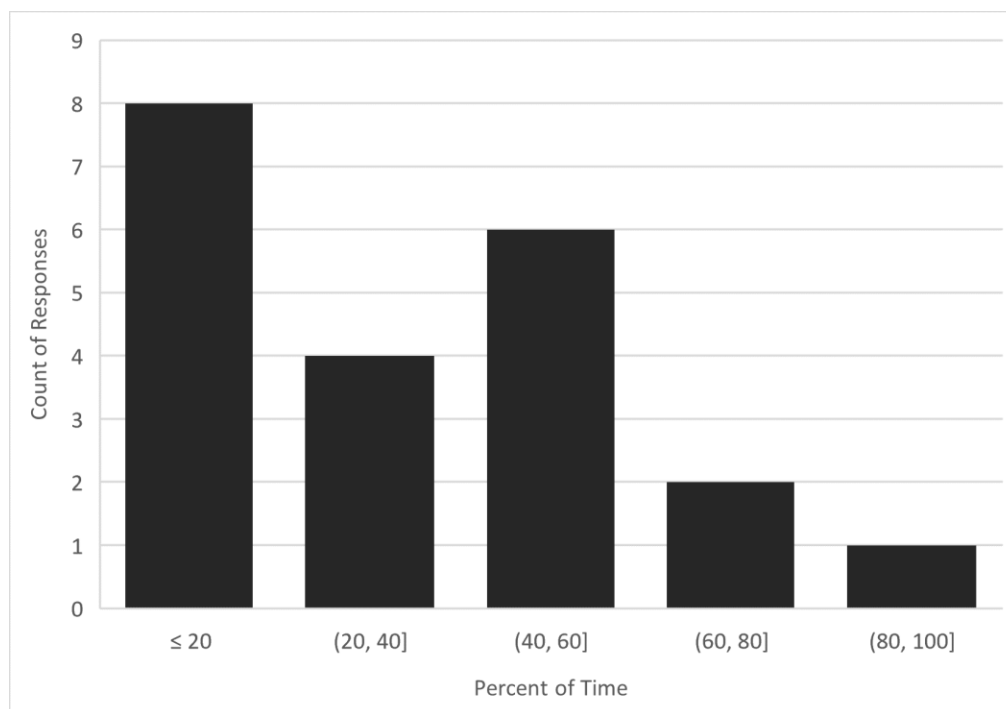
Figure 3. Percentage of Leader's Time Dedicated to Assessment

Software Platforms

A variety of software platforms are in use for assessment. This is presented as a bar chart as each EPP could select all of the software that is currently in use (see Figure 4). For the individuals who selected "other," their comments included SPSS, Qualtrics, Sonia, and a system developed in-house.

One aspect of this data to note is that there have been buyouts and mergers in the field. Three of these platforms are joined in a single company; TaskStream, Livetext, and Tk20 all merged in 2017 to form Watermark Insights. Since this merger, the three products continue to be supported but Watermark has created a new AMS that will be the focus of ongoing development. This may cause some confusion as one respondent reported using "Watermark Solutions" for 11+ years, but the company did not come into existence until 2017. Also, one portfolio-focused solution, Chalk & Wire, was acquired by Campus Labs in 2018 and through further mergers is now under the name Anthology.

Given the small number of responses for each tool, plus the potential for confusion due to corporate mergers, data on length of time of use of each product will not be shared for each system. It will only be shared for the combination of all AMSs and Access. The AMS category combines TaskStream, LiveText, Tk20, Anthology (formerly Chalk & Wire), Jenzabar, and Watermark Solutions. These are proprietary services that include collecting student artifacts, scoring of those artifacts, and data reporting for assessment. While Word & Excel are the largest category, it is assumed that all EPPs will use these equivalent office productivity tools from a different vendor for typical assessment tasks.
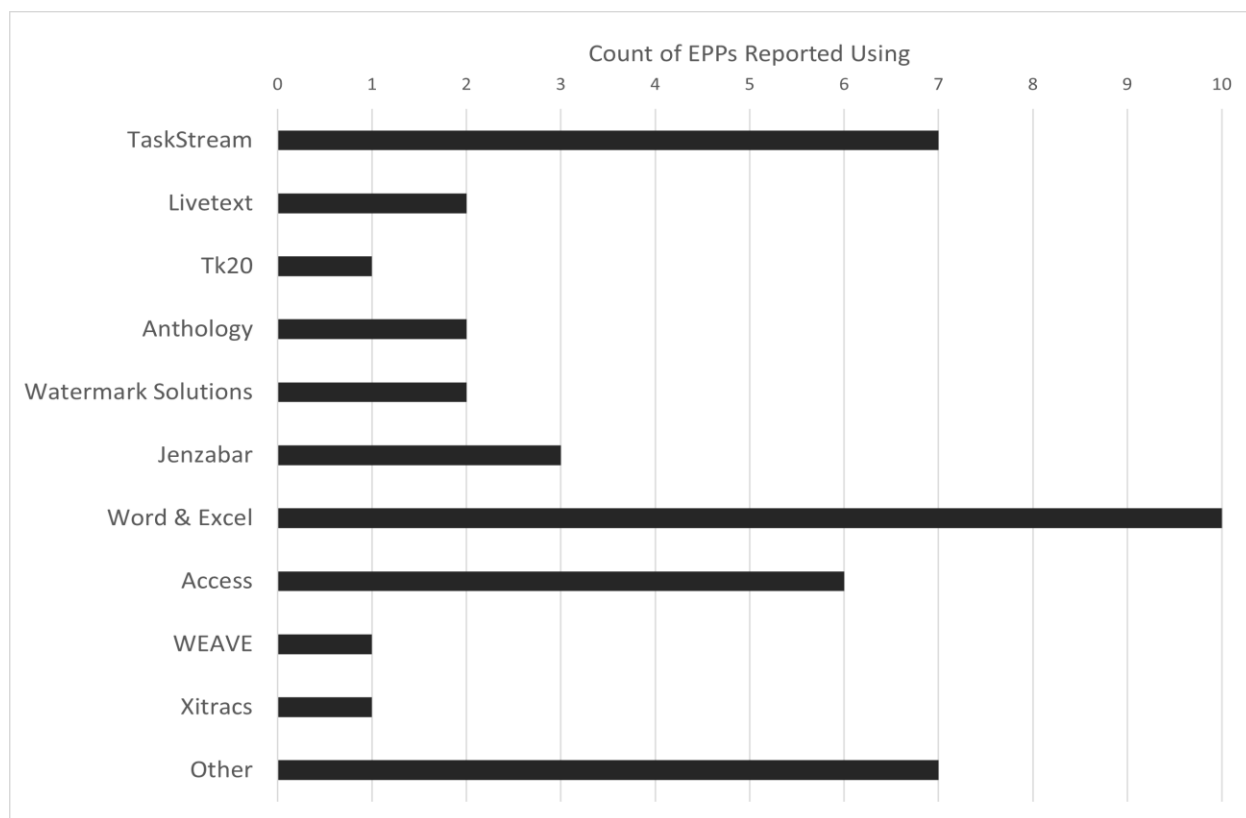
Figure 4. Assessment Software Used by NC EPPs

The data indicate that software used for assessment tends to be used over a long period of time (Figures 5 and 6). Most EPPs indicate they have used their AMS for more than a decade. The use of Access as a tool is similarly lengthy. While the survey does not delve into the use of Access, this may include creating new databases regularly or using and modifying them over time.
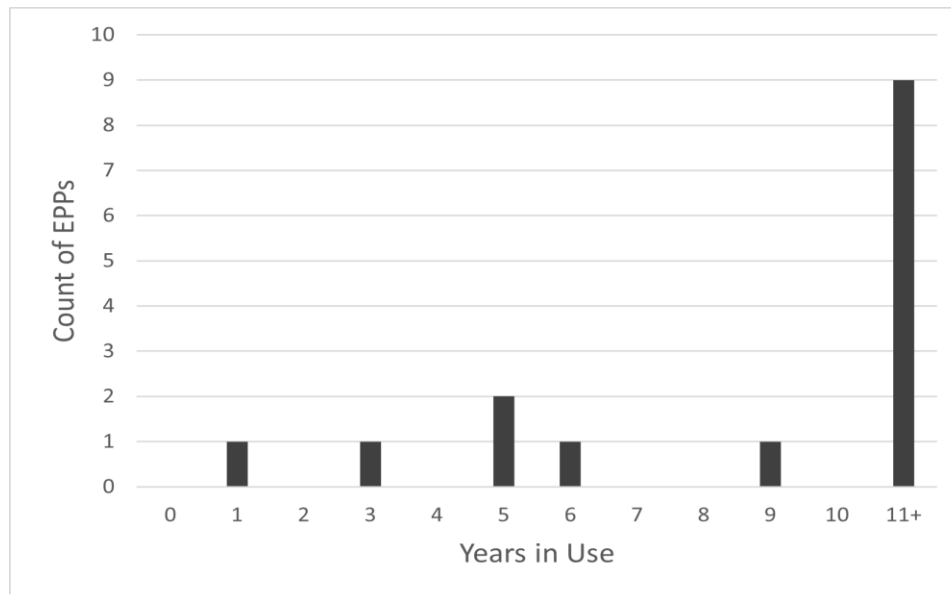
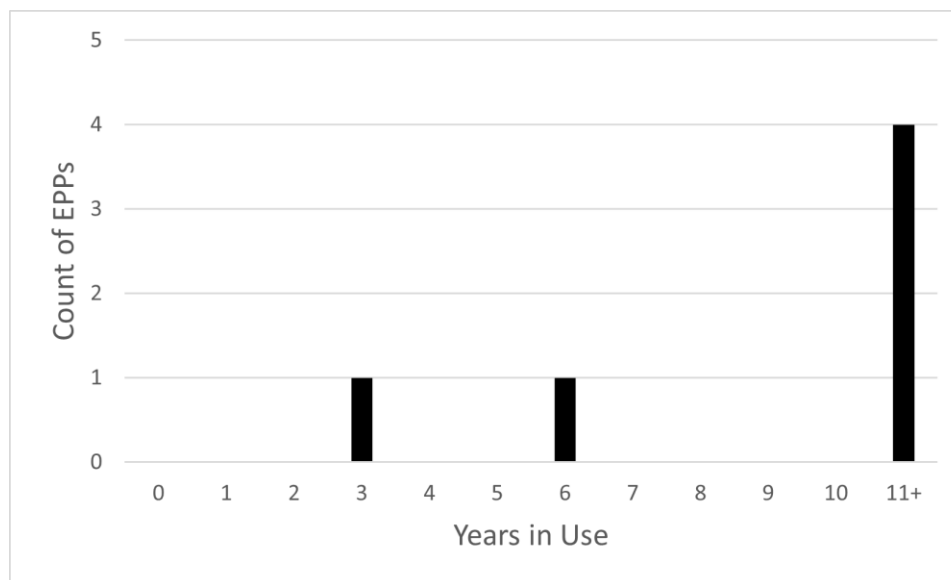*Figure 5.* Years in Use of All AMS Systems Combined

Figure 6. Years in Use of Microsoft Access

In regard to the question about what unit supports each software, support falls on the unit that most likely selected and purchased the system. The software products that fall under Watermark are almost uniformly managed by an assessment or technical support unit within the teacher education department/college. Software intended for assessment planning campus-wide, such as WEAVE, Xitracs, and Anthology are supported by an institution-wide assessment unit. Systems and processes based on Word/Excel and Access are supported mainly by an assessment or tech support unit within the department or college. However, this may be mixed with general campus IT support for the software as some indicated that this campus-wide unit is responsible for general-use support.

Homegrown or Other systems are almost all supported by an assessment or tech support unit within the department or college.

Assessment System Synthesis

Individuals were asked a free response question to describe how their assessment software works together in their assessment system. In general, software such as those in the Watermark family and Qualtrics were used to collect and store data from faculty, supervisors, and host teachers. These data are extracted and stored locally by the program as either spreadsheets or in an Access database. The data are analyzed using Excel and/or SPSS, then reported via Excel and/or Word. One institution reported using a home-grown system that they can modify to meet their assessment needs. Institution-wide assessment systems were also used, though for regional accreditation efforts of the whole institution, not just the teacher education program.

      Although systems such as those in the Watermark family and Qualtrics have some built-in reporting functions that produce standard reports, no institution reported using these for their internal program assessment efforts. That does not mean these are excluded from use, but we note that nearly all institutions acknowledged use of Word/Excel in some way in their system. We conclude that these built-in reporting functions are not a significant contributor to reporting to stakeholders.

Adequacy of Software

A majority of respondents (72%) indicated that their assessment software is adequate for their current requirements; 22% report it is minimal. None indicated their software infrastructure was inadequate; none indicated their system was excellent and exceeded requirements. One respondent indicated the adequacy of their software was "mixed." This respondent also indicated they have been using the same data collection system for 11+ years. This may indicate that the capabilities of this software were adequate at the time it was selected but are less able to meet current assessment needs.

      One interpretation may be that assessment system software is not a significant priority for an EPP. If a system is adequate, the EPP will likely continue to use it for an extended time rather than pursue a newer system and incur the costs of change including new training requirements for stakeholders.

System Components Satisfaction/Need

Considering the perceived satisfaction with various components of the assessment system, personnel resources are the area of most difficulty (Figure 7). None consider their personnel resources excellent. Not quite half consider them adequate. Slightly less than half consider them "minimal," and just over 10% consider them inadequate for the current needs. Of the three components examined, personnel received more "minimal" and "inadequate" ratings than the other two components.
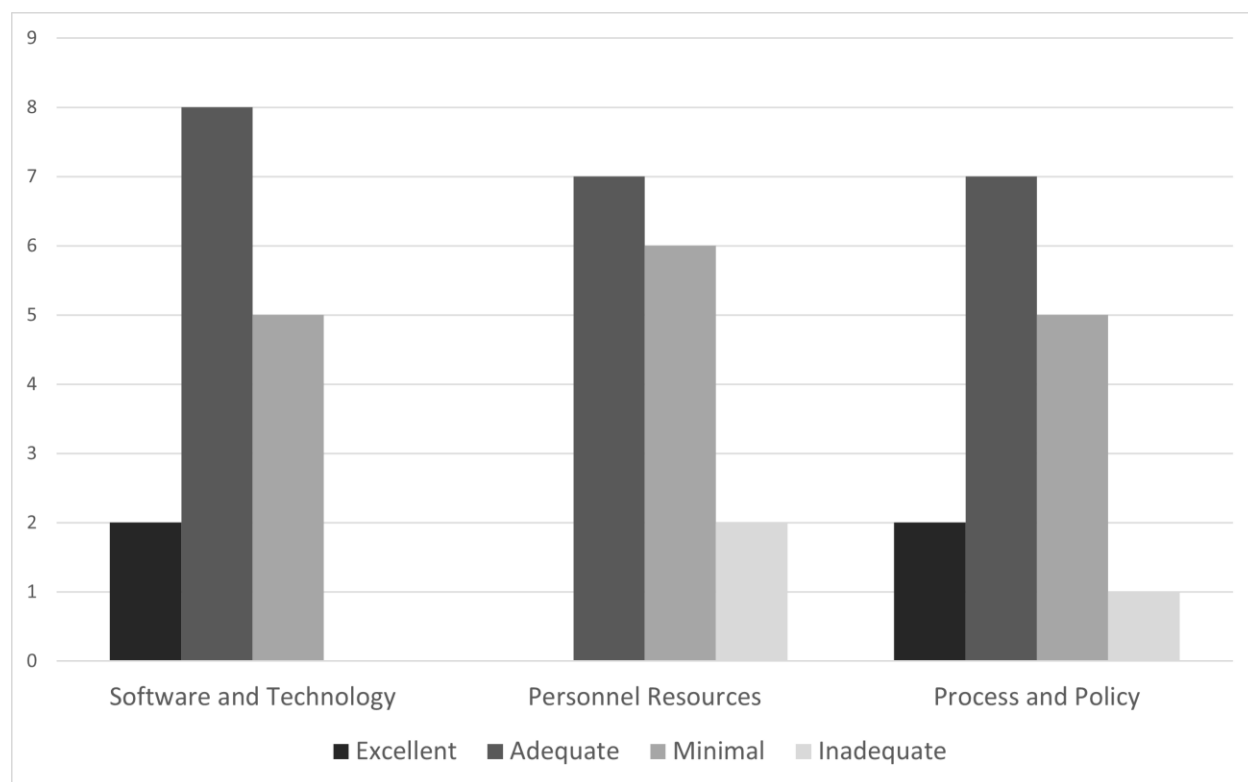
Figure 7. Satisfaction with Assessment System Components

Need for Increased Resources

Finally, the survey asked about which aspects of the assessment system need more resources to be successful. "More Personnel" had the highest percentage of those responding it is a "High" or "Moderate" need, totaling 75% (Figure 8). The next highest needs indicated were for more assistance from faculty and more training/consultation. The lowest perceived need was for additional technology hardware. It is noted that the top three perceived needs relate to personnel resources either for those leading the assessment effort (more personnel, more training/consultation) or for the faculty who play a key role in assessment (more faculty assistance).
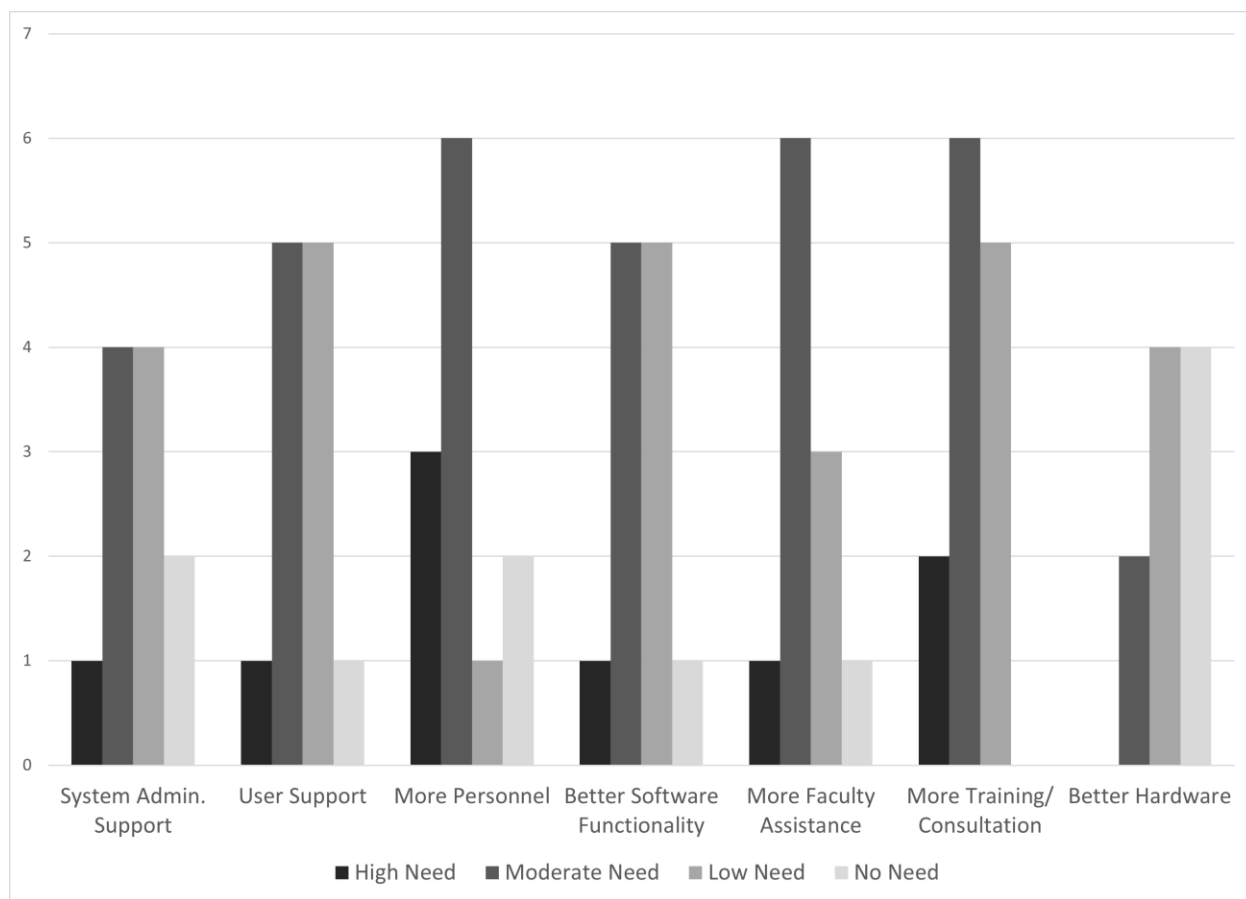
Figure 8. Perceived Resource Needs 2022

Conclusions from the 2022 Survey

The survey revealed three general conclusions regarding EPPs in North Carolina and assessment resources.

      1. There is a general level of satisfaction with the software used by EPPs for assessment. Software and Technology showed the highest level of satisfaction of the assessment system components considered (Figure 7). This is supported by the relatively long amounts of time these systems remain in use (Figures 5 and 6). Even if these systems are heavily embedded in their assessment processes, they can be changed and the lack of change is congruent with the general satisfaction. However, that is not to say the software and technology available is perfect. While TaskStream is the most used individual AMS, several other solutions are also in use. So, it is unlikely that a single software package is the ideal solution for all EPPs in our state. In addition, 28% of responders indicated their software is minimally adequate or of mixed utility. Half of those reporting indicated that "Better Software Functionality" is a high or moderate need (Figure 8). Finally, the descriptions for how these systems are used indicates that the AMS is not the all-in-one solution. Most EPPs export their data from the AMS to be analyzed and reported on using other software.

2. Assessment software tends to have a long lifespan at an institution. We speculate there may be several reasons for this. The effort to create rubrics, assignments, and new processes along with new training for stakeholders is significant and EPPs appear to have little to no appetite to adopt new software if the current software is adequate. A second issue is data storage. Whether a proprietary AMS or a home-grown Access database, the current and historic data needed for assessment work is stored in that system and in a particular format. If the assessment software is changed, that data must either be maintained in the old system, migrated to the new system, or exported from the old system in a readable format. Exporting all the data from a system can be time consuming (notwithstanding vendor representative claims), and the longer that system was used, the more data will have to be extracted. Even in the case of an Access database, extraction and conversion of data from a database created years ago to a current format and without documentation may be a challenge.

A third issue is institutional inertia to change. This may be cultural in an EPP, preferring not to change from software that seems to adequately complete the task. This may be due to internal policy regarding purchasing and migrating key data systems. Software or services that are already in place are already approved by the institution's offices for information technology, legal, purchasing, and others. This would have to be repeated to change to a new system and a plan developed to retire the old system.

A fourth factor may be that the system of assessment requirements, processes, and software all grow and change together in a way that the software remains sufficient to accomplish the functions it is assigned in the system. Stated positively, the software may be well designed for the purpose and receives updates over time from the vendor (or local developers) to continue to meet assessment needs. It may also be that the software becomes so well understood and an integral part of the assessment process that the assessment system is inextricably built around the functionality of the software used. This is distinct from "inertia to change" as it is not about the difficulty of changing the system but about how components of the assessment system have grown and matured together so that the affordances and constraints of the software are effectively managed in the combined system.

In short, if a particular kind of software is functional for the EPP's assessment purposes, there may be little reason to change and many obstacles to attempting to do so.

3. The greatest need identified in the survey is for personnel resources. Current personnel resources are considered only minimal by the majority of EPPs and Figure 8 shows this is the greatest perceived need. If we separate the EPPs by public and private universities, the difference in these is telling. Public institutions, which tend to be larger, are more likely to find their personnel resources adequate than private institutions (Figure 9). Thus, the need appears to be greater at private institutions than public ones. Given that private institutions produce smaller numbers of graduates (on average), they may have fewer personnel lines assigned to their teacher education programs and so have less personnel resources available for all aspects of the program. However, they are under the same state reporting requirements as all EPPs and most either have or are pursuing national accreditation. Two of the fourteen private institutions report having a dedicated assessment director, compared to three of the seven public institutions. For the public institutions, the two largest by teacher production have a dedicated assessment director. This is not to say that public institutions have no personnel needs related to assessment; in a majority of these the work is done by an academic administrator who will have many other program duties. Overall, the need is more acute at private institutions. No other methods for separating EPPs into categories revealed such a significant difference, possibly due to a low absolute number of respondents.
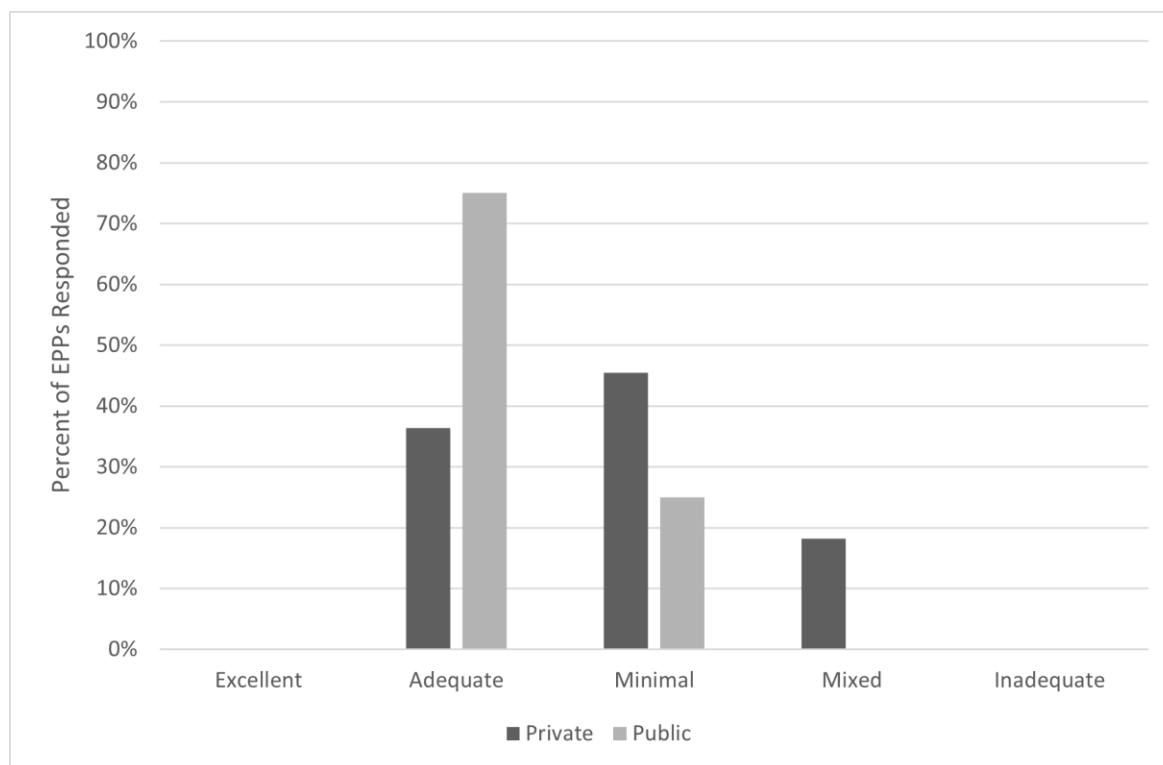
Figure 9. Adequacy of Personnel by Institution Type

COMPARISON OF 2012 AND 2022

There are several insights from comparing data in this survey to the results from 2012. For comparison with the 2012 survey, 46 EPPs were surveyed and 29 responded for a response rate of 63%. This is somewhat higher than the 2022 survey. Similar to the proportion in the 2022 survey, 38% of respondents were from public universities and 62% were from private universities.

Personnel Resources

First, in 2012, 25% of respondents indicated their role was that of an assessment coordinator or director. This aligns closely with 2022 results (24%). However, in 2012, 30% of respondents indicated they were academic leaders (department chairs, deans, etc.) compared to 62% in 2022. This represents a shift in giving assessment responsibilities to those in academic leadership, though some EPPs have maintained a dedicated role for assessment.

Considering adequacy of personnel resources, the situation seems somewhat better now than in 2012. In 2012, 23% of EPPs reported their personnel resources were "excellent" or "adequate" (Table 1). This is now 32% in the current survey. This means that two-thirds of all EPPs still think this resource is minimal or inadequate but is better than ten years ago.

TABLE 1

Comparison of 2012 and 2022 Perceived Component Adequacy

	Percent of ratings that are Excellent or Adequate	
Survey Items	2012	2022
Adequacy of Personnel	23%	32%
Adequacy of Software	84%	72%

Software and Technology

The software utilized in the state has changed very little in the ten years since the original survey. Table 2 compares the software reported in use in 2012 verses 2022. TaskStream is still the most used of the AMS systems, with some EPPs using the other vendors. Most are using office productivity tools in some way. The survey in 2012 did not ask specifically about Microsoft Access, so it is possible that this is included in the "Microsoft Office" category for 2012.

TABLE 2

Comparison of 2012 and 2022 Software Utilization

	2012	2022
TaskStream	36%	39%
LiveText	11%	11%
Tk20	11%	6%
Watermark Solutions	*	11%
Anthology	*	11%
FolioTek	11%	0%
Jenzabar	18%	17%
Microsoft Office	39%	*
Microsoft Word & Excel	*	56%
Microsoft Access	*	33%
Google Sites	18%	*
Blackboard Outcomes	7%	*
Homegrown System	11%	*
WEAVE	*	6%
Xitracs	*	6%
Other	39%	39%

Note: *Not included in that version of the survey

The perceived adequacy of the software and technology resources has dropped slightly in this time. As seen in Table 1, in 2012, 84% of institutions indicated they thought their software was either excellent (17%) or adequate (67%). In 2022, 72% consider their software adequate but none rated software as excellent. It seems that the software is somewhat less functional in 2022 than 2012 for current assessment needs. Taken with the observation that EPPs tend to not change their software, it may be that as requirements from accreditors and the state have changed over time, these software products have not updated to meet new requirements. Further, three of these products (TaskStream, LiveText, and Tk20) have merged to form a single company and that company is working on a new product; the older products may not be keeping pace to meet current needs.

Table 3 compares the responses from the 2012 and 2022 surveys that indicate a high or moderate assessment needs. There are several shifts in perceived needs. EPPs reported their combined high and moderate needs in 2022 dropped by at least 25% from 2012 ratings in the components "Better Hardware," "User Support," and "System Administrator Support." This indicates that the technical back-end processes for assessment have improved significantly over this time frame. Also, the lower need for user support may indicate improvement in training resources; however, the need of training increased from 2012 to 2022. This drop in the urgency of need for "user support" may relate to the long lengths of time some software has been in use, making support less necessary. The reported high and moderate need for "More Personnel" dropped by 9% from 2012 to 2022, though in absolute numbers it is still the highest reported need in both survey administrations. The reported level of need in the area of "More Faculty Assistance" is similar to 2012 levels indicating this area saw little shift. The reported high to moderate needs in the areas of "More Training/Consultation" and "Better Software Functionality" have increased about 10% from 2012 to 2022. This latter result further supports the contention that the aging AMSs still in use are not being updated to add the functionality needed for current accreditation, assessment, and reporting requirements.

TABLE 3

Comparison of 2012 and 2022 Perceived Assessment Needs

	Percent of ratings that are High or Moderate needs	
Survey Items	2012	2022
Better Hardware	45%	20%
More Training/Consultation	52%	61%
More Faculty Assistance	61%	64%
Better Software Functionality	41%	50%
More Personnel	84%	75%
User Support	76%	50%
System Administrator Support	76%	46%

DISCUSSION AND RECOMMENDATIONS

To summarize our findings regarding the 2012 and 2022 surveys:

The current technology landscape in this context is very similar to 2012. Software, once adopted for program assessment, is used over a long period. However, perceived adequacy of the software is dropping. One possible explanation is that AMSs that have long been in use have not undergone continuous development to improve existing features and add new ones to adapt to changes in the assessment climate. It may also be that these AMSs are undergoing regular development but that change has not aligned with changes in the assessment climate, or has been slow to respond to changes. It seems likely that EPPs will need to consider changing to a new product in the next few years. No clear leader has been adopted among EPPs in the state at this time.

There continues to be a need for more personnel resources in 2022 as there was in 2012. This need continues to be higher at independent or private institutions in 2022. As noted above, public institutions tend to have larger student enrollment and receive state funding. Thus they are more likely to have the financial resources to dedicate a staff member either full time or part time to assessment. Again, as noted above for 2022, two of the fourteen private institutions report having a dedicated assessment director, compared to three of the seven public institutions. In addition, the current survey revealed that there is continued need for more training and consultation for persons charged with assessment and more assistance for faculty in the assessment process.

Taking the previous issues together (a decrease in perceived adequacy of software and a continued perceived need for more personnel resources), it appears that capacity available for assessment work is decreasing. If we lack the personnel with the necessary skills and have tools that are becoming less effective over time, the efficacy of assessment work will suffer. Perhaps the AMS vendors will respond to the challenge with upgrades to current products or entirely new ones, but this is external to EPP control. EPPs must consider how they can identify personnel resources that are at least adequate for the work required.

A "silver bullet" technology or AMS has not yet emerged. EPPs in 2022, as in 2012, typically use one system to collect artifacts/portfolios and data and a one or more separate systems to organize, analyze and report. Developing a useful, integrated reporting function in the same system that collects and stores data is a challenge for software vendors to adequately address.

Recommendations for EPPs

While there are many sound reasons to continue using the same technology for program assessment that has been used for many years, EPPs using a "legacy" AMS should consider switching their AMS over the next few years. The most popular AMSs in the state are no longer in active development, so EPPs should not expect to see new features. If the past is any indication, it is more likely that requirements for program assessment, accreditation, and data reporting will change rather than stay the same. As these legacy AMSs continue to age, they will be less able to meet current requirements. At the least, EPPs should look at current alternatives, consider when their current contracts for AMSs expire, and identify means to extract their data from their current system to plan for the possibility of a change.

When considering another AMS, EPPs should consider if the product appears to be adequate (or better) for current assessment requirements and if there are other EPPs in the state or elsewhere that are successfully using it. It is possible that an AMS may have functionality that goes well with state requirements and is not currently popular, but when other EPPs are using an AMS and are pleased with its performance then that is a strong recommendation for its use. Also,

a potential AMS should at least be adequate or more to meet the current assessment requirements and thus hopefully be effective for a long period of time. For example, CAEP requires data to be disaggregated by various subgroups (Council for the Accreditation of Educator Preparation, 2022). An EPP should consider if potential AMSs will support this function or if that will have to be accomplished with external tools. Even better is an AMS that is flexible enough to accommodate potential new requirements and is actively being developed so its perceived adequacy doesn't decrease over time.

EPPs must advocate for the personnel resources they need. This may take the form of documenting time and effort spent on accreditation and assessment efforts, additional training for current personnel, or advocating for the value of assessment in principle. The software is important, but assessment is about judgment which requires personnel.

Recommendations for AMS Vendors

The 2022 survey indicated that EPPs generally use their AMS to collect artifacts and data, then export that data to other software for analysis and reporting. AMSs seem to have a weakness in this area. Admittedly, it would be difficult to create a general-purpose data reporting system that would meet needs of diverse EPPs, but this would be a very useful tool for EPPs. Keeping all the data in a central storage location and eliminating import/export tasks would be attractive to an EPP. In addition, a very powerful reporting solution would make the AMS stand out.

AMS vendors also need to maintain a development roadmap to continuously improve. If they maintain a system for allowing customers to provide feedback and feature requests, they will be more likely to keep up with current requirements and so stay relevant. Given the lengthy periods EPPs maintain their assessment systems, vendors can obtain new customers and retain them if they actively provide functionality the EPPs need.

The documented personnel needs may indicate there is a market for assessment consulting or outsourcing services, particularly for smaller private institutions. As we have discovered during the pandemic, there is much work that can be done remotely. Some EPPs may find it feasible to outsource some assessment tasks such as a standard data analysis process to other entities as a service. AMS vendors could contract for some amount of work to be done by an assessment professional for each EPP. A potential consequence of outsourcing is that an EPP may not maintain an assessment expert for immediate "in-house" access to consultation. However, this could also go to the extreme to completely outsourcing assessment and having little in-person expertise in the EPP. In this model, there may not be a designated assessment expert embedded in the EPP who can be immediately advised and consulted.

Another potential solution is to form a coalition among multiple small institutions to fund a single unit to support them all. This arrangement could provide something close to "in-house" access to assessment consultation. Also, the EPPs could benefit by having sharing rubrics, benchmarking data, and proven practices. However, this would require collaboration among multiple EPPs to manage, meshing disparate EPP missions and philosophies. Also, the practical matter of funding and housing a unit would have to be addressed.

Limitations

It should be noted that our response rate was 44% from university-based EPPs. The 2022 survey invited participation from non – traditional or non-university EPPs in the state although none responded. Therefore, this study lacks information about how those non-traditional EPPs manage the assessment process and their perceptions regarding their resources for the assessment process.

To maintain anonymity, the survey did not collect data that would identify an individual EPP. The mix of public and private EPPs aligns with that of the state as a whole. Also, the mix of sizes of EPPs aligns with that of the state as a whole. However, these results may not match the mix of EPPs in other states and so may not be representative for them.

Regarding software, it is possible that a particular AMS was designed so it effectively matches the assessment processes of another state. That AMS would be at least adequate for the assessment needs and could have a large adoption rate among EPPs, thus being a true "sliver bullet" for those EPPs. It may also be that other states emphasize the value of personnel resources. In light of these limitations, it would be informative to conduct a similar survey of EPPs in other states to see if they have addressed these needs in a more effective way.

REFERENCES

Corbin, R., Carpenter, C. D., & Nickles, L. (2013). The capacity of teacher education institutions in North Carolina to meet program approval and accreditation demands for data. *International Journal of ePortfolio*, *3*(1), 47–61. https://www.theijep.com/pdf/IJEP96.pdf

Council for the Accreditation of Educator Preparation. (2022). *2022 CAEP Initial Level Standards*. Council for the Accreditation of Educator Preparation. Retrieved June 30, 2025, from http://caepnet.org/standards/2022-itp/introduction

Excellent Educators for Every Classroom, N.C. S.L. 2017-189. (2017). https://www.ncleg.gov/BillLookUp/2017/sb%20599

Isaias, P., Miranda, P., & Pífano, S. (2017). Framework for the analysis and comparison of e-assessment systems. *Proceedings of ASCILITE*. https://www.2017conference.ascilite.org/wp-content/uploads/2017/11/Full-ISAIAS.pdf

Maarouf, S. (2015). *Assessment Coordinators' Perceptions of the Impact of Using Electronic Assessment Systems in Accreditation* [Dissertation, Columbus State University]. https://csuepress.columbusstate.edu/theses_dissertations/418/

North Carolina Department of Public Instruction. (2022). *Approved programs*. Retrieved June 30, 2025, from https://www.dpi.nc.gov/educators/educator-preparation/approved-programs

North Carolina Department of Public Instruction. (2024). *EPP Enrollment* [Dataset]. NCDPI Educator Preparation Program Dashboard. Retrieved June 30, 2025, from https://go.ncdpi.gov/EPPDashboardHome

Oakleaf, M., Belanger, J., & Graham, C. (2013). Choosing and using assessment management systems: What librarians need to learn. *Proceedings of the ACRL National Conference*. https://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2013/papers/Oakleaf BelangerGraham_Choosing.pdf

Robertson, R. L., & Larkin, M. J. (2019). Developing an Instrument to Observe and Evaluate Assessment System Maturity. *Journal of Educational Research and Practice*, *9*(1). https://doi.org/10.5590/JERAP.2019.09.1.05

Southern Association of Colleges and Schools Commission on Colleges. (2018). *Principles of accreditation: Foundation for quality enhancement*. Retrieved June 30, 2025, from https://sacscoc.org/app/uploads/2019/08/2018PrinciplesOfAcreditation.pdf

Appendix A: Survey

Q1 Please describe your EPP:

○ Public 4 year university or college

○ Private 4 year university or college

○ Other, Please Describe _____

Q2 Which best describes where teacher education is located in your institution?

○ School or College of Education (with smaller sub-units such as departments)

○ Department of Education (a single unit with no sub-units)

○ Department within Arts & Sciences

○ Other, Please list below _____

Q3 Is your program accredited or pursuing accreditation?

○ Yes - CAEP

○ Yes - AAQEP

○ No

○ Other   _____

Q4 If you have or are pursuing accreditation, what year is your next self-study due?

Q5 Approximately how many students complete your EPP's program each year? (Suggestion:

See your EPP Annual Report for DPI, Table C of the undergraduate and graduate reports)

	0 80 160 240 320 400 480 560 640 720 800
Program Completers ()	━━━━━━━━━▌━━━━━━━━━━

Q6 PERSONNEL - Which best describes your primary role?

○ Faculty member

○ Technology coordinator/director

○ Assessment coordinator/director

○ Field Experience coordinator/director

○ Administrator (department chair/teacher education director/dean/assistant dean/associate dean)

○ Administrative assistant

○ Other, Please list below _____

Q7 Assessment and Accreditation - Approximately what percentage of YOUR time is devoted to data collection, management, analysis, and reporting related to program assessment and accreditation efforts?

	0 10 20 30 40 50 60 70 80 90 100
Time % ()	━━━━━━━━━▌━━━━━━━━━━

Q8 Please identify others besides yourself who are DIRECTLY involved in managing and supporting the assessment system. If the role listed does not apply to your accreditation efforts, click on "N/A" for Not Applicable.

	Number of Individuals in this role						
	1	2	3	4	5	6+	N/A

Administrative Assistant

Technology Coordinator/Staff

Assessment Staff (other than yourself)

Department Chair

Teacher Education Director

Dean

Associate Dean

Assistant Dean

Student Assistant

Field Experience Staff

Other

Q9 Indicate YOUR perception of the adequacy of personnel resources (i.e., number of people assigned to assessment management responsibilities, skill set available) for your assessment system.

○ Excellent - exceeds current requirements and would meet increased demands (1)

○ Adequate - good match with current requirements (2)

○ Minimal - current personnel are stretched to meet current demands and could not meet increased demands (3)

○ Inadequate - personnel are not adequate to meet current requirements (4)

Q10 SOFTWARE   What software do you use for data collection, management, analysis, and reporting related to program approval and accreditation efforts? Indicate approximately how many years you have used this and what unit provides and supports it.

| Years used |
| Not Used   1   2   3   4   5   6   7   8   9   10   11+ |

Taskstream

LiveText

Tk20

Anthology

FolioTek

Watermark Solutions

Jenzabar

Microsoft Word and Excel

Microsoft Access

Digication

Mahara

TacDat

AEFIS

WEAVE

Xitracs

Homegrown system/Other (Please Describe)

	Unit that manages and supports this software			
	Assessment or Tech Support unit/office within the department/college	Institution-wide assessment unit	Institution-wide IT/Technology support unit	Other

Taskstream

LiveText

Tk20

Anthology

FolioTek

Watermark Solutions

Jenzabar

Microsoft Word and Excel

Microsoft Access

Digication

Mahara

TacDat

AEFIS

WEAVE

Xitracs

Homegrown system/Other (Please Describe)

Q11 Please describe, in your own words, how the software you checked above fits in to your

assessment system.

_____

_____

Q12 Indicate YOUR perception of the adequacy of your current primary assessment system

software for data collection, management, analysis, and reporting related to program assessment

and accreditation efforts.

○ Excellent - exceeds current requirements and would meet increased demands

○ Adequate - good match with current requirements

○ Minimal - current software is barely coping and could not meet increased demands

○ Inadequate - current software is not adequate to meet current requirements

○ Mixed - current software may be adequate but has not been proved to be helpful thus far

Q13 Indicate your satisfaction with each aspect of the current infrastructure of your assessment system

	Excellent - exceeds current requirements and would meet increased demands	Adequate - good match with current requirements	Minimal - current infrastructure is barely coping and could not meet increase demands	Inadequate - current infrastructure is not adequate to meet current requirements	N/A or unable to determine
Software/Technology	○	○	○	○	○
Personnel (i.e., number of people assigned to assessment management responsibilities, skill set available)	○	○	○	○	○
Process/Policy	○	○	○	○	○
Other	○	○	○	○	○

Q14 Check all individuals who are responsible for supporting your local users for your primary assessment system software (faculty and students):

☐   Vendor provides support to users directly (1)

☐   Campus IT support (2)

☐   Unit IT support (3)

☐   Unit Assessment office (self-supporting) (4)

☐   Other (11) _____

Q15 Check all supports you provide your local users for your primary assessment system software (faculty and students):

☐   Support website

☐   Social media

☐   Instructional handouts

☐   Instructional videos

☐   Live workshops

☐   Webinars

☐   Other   _____

Q16 Given your current assessment system, indicate the areas where your EPP unit needs to increase resources to meet (or exceed) your requirements:

	High Need	Moderate Need	Low Need	No Need	Not Applicable
More support for system administrators	○	○	○	○	○
More support for users	○	○	○	○	○
More personnel	○	○	○	○	○
Better software functionality	○	○	○	○	○
More assistance from faculty	○	○	○	○	○
More training/consultation	○	○	○	○	○
Better hardware	○	○	○	○	○
Other	○	○	○	○	○

Q17 Overall Comments   Please provide any comments below you wish to elaborate on from your responses to any of the questions in the survey.

_____

_____