USING TRANS-DISCIPLINARY COMMUNICATION IN THE DESIGN OF GENERAL EDUCATION PROGRAM ASSESSMENT: A CASE STUDY

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Abstract: As part of the federally mandated accreditation process, higher education institutions must periodically assess the effectiveness of general education programs to ensure that students acquire and demonstrate certain essential skills, as defined by their regional accrediting bodies. Facilitating the design and implementation of this assessment process for continuous improvement requires institution-wide engagement and collaboration with faculty from the numerous disciplines that contribute to the general education program's curriculum. Trans-Disciplinary Communication (TDC) skills are essential for conducting such a complex initiative. This paper will describe how TDC assisted in the success of this work. The lead author is the Assistant Director for Assessment and Accreditation at New Jersey Institute of Technology (NJIT), an R1 polytechnic university in the U.S.A. In this role, he was required to lead faculty and other stakeholders in redesigning and implementing a new process for assessing NJIT's General Education Requirements (GER) program outcomes. The GER assessment initiative has fostered engagement with faculty members across various colleges and departments, all contributing to the General Education Requirement (GER) program's curriculum. This engagement stems mainly from ongoing collaborations with three key groups: The Faculty Senate's GER Subcommittee, a dedicated GER committee located within the College of Science and Liberal Arts (CSLA) at NJIT, and a diverse group of assessment-focused faculty, staff, and administrators spread across the institution. This case study has identified specific challenges that can be resolved through the implementation of effective TDC. An example of these challenges was effectively communicating the accreditation requirements, best practices, and the importance of assessing the general education curriculum to a diverse faculty. A literature review of relevant research into the challenges of working with diverse faculty on assessment issues as well as TDC tools and best practices relevant to these challenges, is included. The paper describes the processes implemented and how TDC facilitated progress as part of divulging and translating concepts from assessment across disciplinary boundaries. Finally, the authors present a clear set of conclusions that provide recommendations for others who might engage in this type of collaborative co-design utilizing TDC.

Keywords: Accreditation process and requirements, General education programs, Trans-Disciplinary Communication (TDC) skills, Faculty engagement, Assessment process, Higher education assessment, Collaborative Co-design.

INTRODUCTION

New Jersey Institute of Technology (NJIT) is redesigning the infrastructure and processes for assessing its General Education Requirements (GER) program to facilitate continuous improvement of undergraduate student outcomes and ensure the institution meets its accreditation standards. This design process, led by the Office of Institutional Effectiveness' Assistant Director for Assessment and Accreditation (ADAA), needs the engagement of faculty from the numerous disciplines that contribute to the GER program's curriculum. This engagement comes primarily from sustained collaborations with the Faculty Senate's GER Subcommittee, a purpose-built GER committee housed in NJIT's College of Science and Liberal Arts (CSLA), and other assessment stakeholders across the institution.

Prior to being approached to collaborate on this article by the co-authors, the ADAA was unaware of the field of TDC. In the

book "Reflections on Communication, Collaboration, and Convergence" [1], Dr. Lipuma and Leon discuss their philosophy and practical experience utilizing TDC to build collaborative convergence. This professional philosophy was expanded upon assuming the role of NJIT's assessment professional, declaring that assessment at NJIT must meet three overall requirements. First, assessment processes must be as effective, efficient, beneficial, and painless as possible. Secondly, they must be centrally managed through communication, collaboration, and facilitation. Finally, they must be transparent as defined by the National Institute for Learning Outcomes Assessment (NILOA) "Transparency Framework" [2]. Through this philosophy, the ADAA has effectively implemented elements of TDC in both the design and implementation of assessment processes at NJIT.

Although helpful in facilitating the assessment of individual academic programs, TDC is more acutely necessary to effectively conduct the assessment of general education programs. General education assessment efforts are naturally transdisciplinary due to the inclusion of a wide array of faculty, staff, and administrators who have a stake in ensuring an institution's continued accreditation and student success in such an all-encompassing curriculum. The transdisciplinary nature of general education programs contributes to the challenge of designing and implementing their assessment. It falls to assessment professionals to engage transdisciplinary stakeholders, facilitate progress, and achieve consensus. This is made even more challenging by the history and higher education assessment and the inherent difficulty in fostering an institutional culture of assessment.

BACKGROUND

The field of higher education assessment developed in the 1980s as the result of the internal observation that higher education institutions could learn from feedback on their own performance and from external calls for greater accountability for student outcomes and returns on investment. From this early stage, the field struggled with the dual and often conflated purposes of self-improvement and compliance. More acutely, assessment professionals struggled to convey the meaning and purpose of assessment to institutional stakeholders, particularly faculty [3]. The field has since made great strides in fostering improved outcomes. However, the core challenge of engaging faculty and other stakeholders in the process of assessment and continuous improvement remains.

NJIT's assessment efforts are housed within the Office of Institutional Effectiveness (OIE), which has worked over the years to conduct or facilitate assessment at both the strategic and program and unit levels. In early 2021, turnover in the office's assessment professional role prompted a reevaluation of the assessment process, which resulted in substantial revisions that were guided by the ADAA's assessment philosophy, the Middle States Commission on Higher Education's (Middle States) accreditation standards, and current best practices in higher education assessment.

Regional accreditors, such as Middle States, require higher education institutions to ensure that undergraduate students graduate with specific common skills and knowledge regardless of their chosen discipline. In the case of those institutions accredited by Middle States, Standard III requires that general education programs be either integrated into the program curriculum or free-standing, offer a sufficient scope that draws students into new intellectual areas and expanded

awareness, and support students' acquisition and demonstration of ten identified skills and knowledge. The standard also requires that the effectiveness of the general education program be periodically assessed [4] Standard III2023. Those who entered Self-Study Institute (SSI

The revision of program-level assessment processes thus extended to the particular case of NJIT's GER program. Preliminary assessments were conducted before the Middle States team visit in 2022, but the program required the development of a purpose-built assessment process. As a result, NJIT received a single recommendation from the Middle States team that called for the institution to "provide further evidence of the development and implementation of organized and systematic assessments that evaluate the extent of student achievement in general education [5]." This created a compliance-based mandate to design and implement general education assessments. However, such a mandate only goes so far toward fostering a culture of assessment. Faculty, and other institutional assessment stakeholders, need more positive motivation in the form of guidance, support, and facilitation to go beyond mere compliance to conduct honest and meaningful self-assessments for continuous improvement.

The General Education Requirement (GER) program at NJIT was formally established in its current form in 2017 as an evolution from the previous General Undergraduate Requirements (GUR) curriculum. The primary objective of this revision was to streamline the general education curriculum, ensuring it provides students with the comprehensive knowledge necessary to meet the demands of our modern society. The transition from the GUR to the GER program involved establishing the GER Subcommittee of NJIT's Faculty Senate. This permanent subcommittee is tasked with the ongoing management and assessment of the GER program, ensuring the curriculum's effectiveness and relevance are continually evaluated and improved.

After the GER was approved and launched, the GER Subcommittee found that the broad definitions of the GER's Literacies were insufficient for informing the approval of new courses for the curriculum. The GER Subcommittee requested that a committee within the College of Science and Liberal Arts (CSLA), which houses most of the university's GER courses, develop more specific guidelines for approving new courses in each GER Literacy. The newly established CSLA GER Assessment Committee (CSLA Committee) developed a set of sub-literacies for each literacy that empowered the GER Subcommittee to determine if newly proposed courses met the requirements for inclusion in the GER curriculum. Both committees are composed of NJIT faculty, staff, and administrators from across the institution's colleges, departments, and administrative units.

In 2021, OIE launched the GER assessment initiative in collaboration with the GER Subcommittee to develop a plan for assessing the GER curriculum in accordance with Middle States Standard V [4] Standard V2023. Those who entered Self-Study Institute (SSI. Research-based on current best practices in higher education assessment and the Middle States standards informed a proposal for GER assessment. Several iterations of the proposal were developed based on feedback from the GER Subcommittee and through collaboration with its chair. In response to the proposals, the GER Subcommittee called for the reconstitution of the CSLA Committee to lay the groundwork for creating a plan and the materials for the periodic review and assessment of the GER curriculum. By examining interactions and efforts within these scenarios created within these

committees, this paper will highlight the need for and application of TDC.

LITERATURE REVIEW

The field of higher education assessment has produced considerable research toward answering the question of how to effectively engage faculty and stakeholders in assessment processes while tackling the conflation of assessment and accountability (Walvoord, 2010; Banta & Polomba, 2015; Suskie, 2018). In addition, the National Institute for Learning Outcomes Assessment (NILOA) produced a series of Occasional Papers and Viewpoints that provide a wide range of opinions from a variety of different disciplines on this central topic of program assessment and evaluation [6]–[10]. Another approach is to share case studies [11]to provide context to the scenario in which actions are taken and decisions made that are impacted by the degrees of effective communication. Specific applications regarding the assessment of general education programs have also been discussed through Mary Allen's guiding text for general education assessment [12] and through specific models and case studies [13]–[15]

There is notable alignment between the recommendations included in each of these guides and case studies with TDC, though none explicitly utilize its language and framework. This gap in the literature provides a significant opportunity to build understanding and clarify methods for effectively engaging faculty and other stakeholders in assessment in terms of TDC and thus provide both new and veteran assessment professionals with a more potent toolkit for establishing true cultures of assessment and continuous improvement. Higher education assessment professionals, by the nature of the field, are sourced from many disciplines and professional backgrounds. This makes the provision of such a toolkit that much more critical to promoting wider advances across higher education through assessment.

For this work, several key categories for TDC are identified as an essential part of the scenario discussed. To better understand the link between TDC and these areas, a number of seminal works were used to inform the GER assessment initiative. Kinsella-Meier and Gala [16] present collaboration as an essential partnership that brings together different entities to achieve common goals. This notion is further explored in Lipuma et al. [1], which highlights strategic models for collaboration in STEM education and research. Both of these works help identify the challenges of TDC when diverse individuals are asked to work together, as well as when organizations must come together to attain goals and identify areas of commonality.

Bolt et al. [17]life, and social (BLS emphasize the importance of cross-disciplinary methods in modern education, especially in research training. Lunenburg & Ornstein [18] provide a broader view of the administrative aspects of educational practices and highlights the role of interdisciplinary and transdisciplinary approaches in educational administration. As will be shown later, these types of TDC are key to effectively crossing the divide between university administrators, faculty from diverse disciplines, and a wide range of staff members who contribute to the work and the conversations related to it.

Frodeman et al. [19] provide an extensive analysis of interdisciplinarity, its applications, and challenges. Holbrook [20] emphasizes the necessity of communication in interdisciplinary work. Academic disciplines can look to large-scale organizations for research, such as the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine's "Facilitating Interdisciplinary Research" [21], which offers a comprehensive discussion and practical ways of enabling

interdisciplinary research. The main message of these identifies the need to find common ground in interdisciplinary and transdisciplinary research in a variety of scenarios fostered by TDC [22]–[24].

Nicolescu [25]France provides a philosophical foundation for transdisciplinarity, while McGregor [26] explores the nature of transdisciplinary research and practice. The practical application of transdisciplinary approaches is exemplified by Vogel et al. [27].

In this context, with multi-disciplinary views of a variety of topics, the question is still where to begin and how to proceed. In a survey of TDC research [28], a scenario is defined that helps clarify the goal of the communication task, the target participants involved, and the situation that surrounds it to identify the conditions, context, and circumstances. With this, different needs for TDC are found to be categories that help clarify the work being done. Effective TDC, then, is not a panacea but a means for recognizing methods and tools for attaining the goal of communicating complex content to a diverse audience in many different situations. It is these general categories, like the need to disseminate or divulge content to a group, that can be useful in this case study. In addition, when a diverse group comes together to collaborate, and a leader must both facilitate and foster effective dialogue, we find another place TDC becomes essential. Finally, in a scenario where organizational elements from many different departments must work together, TDC becomes a vital tool for translating outside directives or needed guidelines as well as finding common ground. These types of scenarios are brought out to aid in the understanding of the need and value of TDC.

DISCUSSION

This discussion will focus on the three major challenges of engaging a diverse array of faculty, staff, and administrative stakeholders to accomplish the mission of the GER assessment initiative. The first major challenge was to effectively communicate the accreditation standards, best practices, and advantages of assessing the general education curriculum, thus engaging stakeholders in the initiative. The second major challenge was navigating NJIT's shared governance structure in order to effectively collaborate with the two committees. The third major challenge in achieving the initiative was effective leadership, generating momentum, and realizing progress. These challenges will be discussed in the context of higher education assessment. Their solutions and successes will be framed within the context of TDC. Lastly, recent breakthroughs in achieving integration will be highlighted.

EFFECTIVE COMMUNICATION AND ENGAGEMENT

A significant challenge was engaging the GER Subcommittee in developing a GER assessment plan and generating momentum toward its completion and approval. This was further complicated by the difficulties in effectively communicating the accreditation standards, best practices, and advantages of assessing the general education curriculum to this diverse subcommittee. As NJIT's assessment culture is still in development, many subcommittee members were often unacquainted with the concepts and language of higher education assessment. They were not necessarily convinced of the need for assessment. The recommendation by Middle States that further supports the GER assessment initiative is a compliance-based motivator, which only goes so far in generating momentum toward fully developing and

implementing the GER assessment plan. The initial plan was to work with the GER Subcommittee to develop the assessment plan. The ADAA found that the subcommittee needed a pre-developed proposal to prompt discussion in the subcommittee, obtain feedback, and begin generating consensus toward the plan's final approval.

The ADAA's suggestions were developed and refined over the 2021-22 academic year from the initial slides-based calls to action with context to a fully developed white paper supported with references to the Middle States standards and best practices in higher education and general education program assessment. Research was conducted into the best practices of higher education assessment and the Middle States standards to inform the development of the GER assessment plan so that it would meet the needs of NJIT's accreditors as well as the context and stakeholders of NJIT itself.

Although formalizing these communications into a white paper provided a comprehensive reference document for the subcommittee members in the scholarly language of faculty, it remained difficult to engage them with the material and establish momentum. Additional subcommittee meetings and presentations were needed to facilitate engagement and bring their attention to particular aspects of the proposals that would prompt reactions and discussions. The challenge to TDC was to clarify for individuals and then develop a shared language that was mutually understood but not resting in any one discipline or culture within the group.

NAVIGATING SHARED GOVERNANCE FOR COLLABORATION

To execute the complex process of developing and implementing the GER assessment plan, the ADAA collaborated with multiple committees of diverse faculty, staff, and administrators. Both the GER Subcommittee and the CSLA Committee are part of NJIT's shared governance structure, which is designed to balance "shareholder participation in planning and decision making with administrative responsibility, with clear delineation of responsibility and authority as delegated by the Board of Trustees" [29]. NJIT's Faculty Senate is the main shared governance body that represents the institution's faculty, under which there are several committees, such as the Committee on Undergraduate Education (CUE). The GER Subcommittee is a subcommittee of CUE. The CSLA Committee was requested by the GER Subcommittee to be established under the authority and supervision of CSLA but reports its findings and recommendations to the GER Subcommittee.

The GER Subcommittee is made up of faculty from across NJIT's colleges and departments, with representation from academic leadership and other administrative units such as NJIT's library. The CSLA Committee is made up of faculty from each CSLA department, the college's administration, and the NJIT library. Although the vast majority of GER courses are run by CSLA departments, there is a small subset of courses run by external departments that will be consulted as appropriate. Some of the members of the CSLA Committee also serve on the GER Subcommittee; however, others only serve on the CSLA Committee and are not directly involved in the proceedings of the subcommittee. All of these committee members serve as a small aspect of their primary roles and, as a result, often are limited to contributing to the work of the committees within the context of the committees' meetings. Although informational materials are provided to the committees in advance of meetings, it cannot be expected that most committee members will be able to effectively

review and understand materials. This negates most attempts to prepare committee members for decision-making ahead of meetings and forces the communication of the core content of the materials in the committee.

Much of the progress made in the initiative was empowered through collaborations with the chair of the GER Subcommittee, who had been involved in the subcommittee since at least the GUR to GER transition effort. This historical and institutional resource was critical to navigating the sometimes-hidden realities and politics of the GER program, avoiding uninformed blunders, and helping to translate the language of higher education assessment to something that the other faculty and stakeholders would understand and in a way that would positively engage them. This collaborative leadership allowed the author to reach out to an expert and be the recipient of the TDC about the workings of the committee essential to the success of the imitative, rather than sanding apart and using a multi-disciplinary approach, working together to integrate and align the messaging using TDC allowed for progress within the subcommittee and the larger faculty community.

LEADING THE INITIATIVE

The development and approval of the GER assessment plan and the revised GER Course Approval Policy required significant collaboration with the GER Subcommittee's chair and persistence in obtaining the subcommittee's feedback through reiterations and increasingly detailed proposal documents. Drafting an updated GER mission statement, aligned goals, and student learning outcomes has proven more complex. It took several GER Subcommittee meetings over the fall semester to obtain feedback from the subcommittee's members that could direct the development of the white paper proposal. Collaboration with the GER Subcommittee's

chair allowed for incorporating solutions and clarifications to the subcommittee's concerns into the assessment plan proposal. In response, the GER Subcommittee called for the CSLA Committee to be reconstituted to create standards and rubrics for assessing the curriculum.

Over the course of the Fall 2022 semester, the policy revision proposal was presented to the subcommittee and updated in collaboration with the subcommittee. Similar to the development of the GER assessment plan, it took several reiterations of the proposal to obtain the subcommittee's feedback and generate an approvable proposal. Although approved on time by the GER Subcommittee, the revision requires final ratification by the Faculty Senate's Committee on Undergraduate Education (CUE), adding another layer of transdisciplinary review and approval.

The GER Subcommittee delegated the drafting of all three components to the CSLA Committee. However, that committee was uncomfortable proposing a redrafted mission statement or goals for the GER program and referred these tasks back to the subcommittee. The CSLA Committee has provisionally adopted outcome statements that have grown out of those developed for the GER Course Literacy Review. The committee made Only minor updates, and their work has focused on the development of holistic developmental rubrics. Much like the GER Subcommittee, the CSLA Committee needed significant time and effort to process their mandate and role in the GER assessment plan development initiative, as well as the relevant proposals that were previously developed. Generating momentum was also a challenge in the case of this committee, which has been achieved with varying degrees of success by the discipline of the various committee members.

For example, significant progress has been made by the Department of Humanities and

Social Sciences (HSS), which owns many of the new GER outcomes. This is directly connected to the fact that the second author of this paper has more experience in program assessment, eldership, and TDC. Leveraging these skills helped push the work forward and develop shared visions and stronger collaboration. Other disciplines and their aligned outcomes have progressed slower outside the committee meetings. However, the path forged by the HSS department provides the other committee members with established precedents that they can follow, which should give an additional boost towards generating momentum in their efforts.

As a leader, communication is essential; within the scenario described above, TDC provides a way to generate a shared vision, define the goals and objectives of the group within the scope of the larger imitative, and allow for individuals to be heard and contribute to a commonly co-designed culture. Through TDC, the lead author was able to identify ways to be circumspect and reach out to the various members of the two committees in order to understand issues and work to clearly communicate them to the various stakeholders and committee members. Often, the complex nature of the roles of individuals within the different hierarchies was essential for the leader to navigate. For example, the chair of the CSLA committee was just a member, while the sub-committee chair sat on the CSLA committee as both an advisor and member. Both were on the general faculty representing their departments. Untangling and clarifying these different disciplinary, department, and specific task roles identified a challenge for TDC that the author still is seeking help resolving.

BREAKTHROUGHS IN INTEGRATION

Through the lead ADAA's efforts to engage the committees in the work of the GER assessment initiative, establish momentum, and make progress towards achieving the initiative's mission, there have been some notable recent breakthroughs towards achieving integration. The more recent meetings of the GER Subcommittee have shifted from efforts to engage members in the initiative towards fielding questions and navigating concerns and debates within the subcommittee. The initial fears about issues such as data collection and the resulting workload of GER assessment prompted questions that either informed the further development of the assessment plan proposal or provided opportunities to clarify aspects of the proposal in a way that resolved concerns and positively engaged previously reluctant members into the process.

Similar breakthroughs are developing in the context of the CSLA Committee through the development of the GER rubrics and the discussions of assessment data collection and processes. As this committee is more recently re-established, they are further from achieving full integration; however, some subsets of the committee have progressed to this point or are close to it. Many of the remaining barriers to momentum are relegated to the disciplinary level and between closely related disciplines. However, the membership of the CSLA Committee includes the HSS department's assessment director, who is already familiar with the languages of assessment and evaluation and has provided additional support to the ADAA and the committee to help translate from the language of assessment for the rest of the committee.

Through the testing of assessment data collection systems and the consulting of other faculty to inform the further revision of GER

rubrics, a wider array of faculty, and other institutional stakeholders, the foundations of wider integration are being established. The intent of expanding consultation beyond the committees themselves is to obtain more diverse feedback to inform continued development while soft-launching efforts to establish a wider culture of assessment and continuous improvement at NJIT. This process is being spearheaded by the HSS department for their rubrics.

When disseminating assessment information to faculty, staff, and administrators, such as accreditation standards and assessment plans, it is important to provide them in multiple formats to ensure they can be referenced, understood, and scrutinized. Faculty are more likely to respect matters of assessment when it is communicated in scholarly terms, hence the need for academic documents with references, such as the GER assessment proposal white papers. However, those same faculty will often not have the time to thoroughly read such materials, so they must be summarized with visual aids in the form of brief presentations that are designed to prompt questions.

It is also important to collaborate closely with the leadership of transdisciplinary committees to obtain an ally in assessment efforts, learn about the committee's historical and political contexts, and help translate the needs and benefits of assessment to promote understanding and engagement with the wider committee. Similarly, identifying assessment-minded faculty and collaborating with them to further the mission of assessment is also important to the success of such efforts. Faculty that engage in the scholarship of higher education pedagogy and evaluation will be instrumental in supporting TDC and collaboration between higher-education-assessment professionals, faculty, and other institutional stakeholders.

In researching TDC and striving to translate prior experience into the language of TDC, the lead author found it exceedingly difficult to locate any academically-sourced lists or definitions of the actual skills of TDC. As a result, a less academic source in the form of a LinkedIn collaborative article was referenced. The article identifies the skills of TDC as understanding the context, learning the language, adapting your style, building trust and rapport, and reflecting and evaluating [30]. It is recommended that the discipline develops a list of the necessary skills to conduct effective TDC so that the author and others, especially students interested in the field, can objectively analyze the gap between their practice and potential using academic literature. The existing TDC literature does not appear to communicate about TDC for TDC but instead relies on specific disciplinary language. Such a skills list is critically needed if the field seeks to foster greater transdisciplinarity and effective TDC.

CONCLUSION

In each of the above-mentioned processes, the ADAA conducted research into the best practices of higher education assessment and the Middle States standards to inform the development of the GER assessment plan so that it would meet the needs of NJIT's accreditors as well as the context and stakeholders of NJIT itself. This internal exploration was conducted through collaborations with other OIE staff and, more importantly, the chair of the GER Subcommittee, who had been involved in the committee since at least the GUR to GER transition effort. This historical and institutional resource was critical to navigating the sometimes hidden realities and politics of the GER program, avoiding uninformed blunders, and translating the author's assessment language to that used previously by the members of the committees. Based on

the new understanding of institutional context and language, the author was informed enough to adapt their style to ensure progress was made and momentum was built. For example, the initial slide-based presentations were too vague to effectively promote discussion and feedback from the committees. Instead, detailed and near-complete proposals were required to prompt the committees into providing feedback, lest the proposals be enacted in their proposed forms without such feedback due to how official and complete they were upon committee review. Any failure to adapt to the realities of the committee would have resulted in a catastrophically failed effort due to the lack of committee engagement. In combination with the author's new contextual understandings, they had the tools to navigate debates and concerns within the committees that could easily have derailed the initiative if left unmanaged.

Building trust and rapport with the committee members, and especially the committee chairs, was also critical to making progress. Through the author's philosophy of communication, collaboration, and facilitation, the committee members were often reminded that the purpose of the author's efforts was to design the most effective, but also efficient, system possible and to ensure their concerns were addressed and solved through the feedback and development process. The trust and rapport built through these engagements allowed for what initially felt like talking to a wall to develop into a more collegial and productive discourse. Through the implementation of each of the previously-mentioned TDC skills, the purposeful and ongoing reflection and evaluation of progress, challenges, and successes is critical to adapting to changing contexts and evolving challenges. Especially in the field of higher education assessment, we must walk the talk. In other words, if we as assessment professionals expect our institutions to assess their effectiveness, we must also assess our own effectiveness as facilitators.

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