Reflecting on the Reflections: Using Word Clouds to Assess a Catholic University Core Curriculum and Community-Engaged Learning Course

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Abstract: The current research utilized a modern word cloud tool to assess the effectiveness of course objectives and outcomes of a community-engaged learning and core curriculum course at a private Catholic University. The foundational course revolves around social justice using the setting of sport and physical activity. Beginning with a final reflection of the course and inserting data into word cloud tool, results indicate that this assessment technique offered insight into future enhancements of college course assessment by breaking down and focusing on specific words or phrases that may or may not be meeting the needs of the instructor and students.

Keywords: *assessment, core curriculum, reflection, word clouds*

Introduction

According to the National Center for Education Statistics (2022), as of the 2019-2020 academic year, there are 3,982 colleges and universities in the United States. With the hundreds of thousands of courses offered to college students each year, the importance of classroom assessment becomes primary as these same colleges and universities battle to show potential students the value of a college degree. DeLuca et al. (2019) offer assessment themes and priorities for learning in several ways.

> (1) Teacher's use of evidence to summate student learning and assign a grade concerning student's achievement of learning objectives.
> 2) Teachers' and students' use of evidence to provide feedback on progress towards learning objectives (i.e., inform next steps for learning and instruction), involving both teacher-directed and student-centered approaches to formative assessment.
> (3) Focuses on how the student is learning by providing feedback or experiences that foster students' metacognitive abilities and learning skills (e.g., self-assessment, goal-setting, learning plans). Involves teachers but is primarily student-centered. (p. 163)

Similar assessment themes are offered among private universities as well. Religious universities such as Baylor University, Azusa Pacific University, and Dallas Baptist University offer additional learning assessment themes that center around their foundational religious values. Baylor University, for instance, demonstrates pride in their Christian values through the connection of its academic and religious traditions by "encouraging the integration of Christian faith and the intellectual life" (Baylor University, 2022, n. p.).

Assessment of a university course can take many forms with the intent to understand if course objectives and outcomes are being met. Montgomery (2002) reminds us that reviewing an assessment to measure the process, progress, and product of learning can lead instructors away from traditional problems in evaluating students. "Just as traditional pencil-and-paper assessment methods cause instructors and students to emphasize isolated and discrete facts (sometimes thought of as "course content"), authentic assessment methods free them to develop higher-level concepts and related understandings" (p. 38). More authentic assessment methods allow teachers and students to reflect on the complexities found in their past, present, and future. Therefore, the problem explored was to investigate a more authentic University course assessment tool, richer than traditional course assessments, minimizing the impact of new technologies, maximizing the ability for students to reflect, and the potential for both teacher and student to be assessed.

The current research utilized a modern word cloud tool to assess the effectiveness of course objectives and outcomes of a community-engaged learning and core curriculum course at a private Catholic University. The foundation of this course revolved around community-engaged learning and social justice university core curriculum underpinnings using sport and physical activity as the setting. The results from the word cloud technique may offer insight into future enhancements of college course assessment by breaking down and focusing on specific words or phrases that may or may not be meeting the needs of the instructor and students. Our guiding question was, *How does the use of a word cloud impact the assessment of a university core curriculum and community engaged course?*

Literature Review

Numerous pieces of literature describe assessment in higher education (e.g., Carless, 2005; Levy & Levy, 2022) with methods such as reflectivity to guide assessments (e.g., Mezirow, 2000; Paul, 2001; Ruland & Ahern, 2007). These themes drive the following review of literature along with a useful word cloud assessment tool. However, it is important to identify fundamental learning assessments. Stiggins (2006) recognized five factors for quality assessment, (1) Arise from and be designed to serve the specific information needs of intended users, (2) Arise from clearly articulated and appropriate achievement targets, (3) Accurately reflect student achievement, (4) Yield results that are effectively communicated to their intended users, (5) Involve students in classroom assessment and communication (p. 12). Furthermore, they share that these assessment methods fall into four basic categories (1) Selected response and short answer; (2) Extended written response; (3) Performance assessment; and (4) Personal communication.

Assessment at the University Level

Education should be about student learning and the development of how to learn effectively. So much energy is spent on assessments that it must be more efficient in improving learning processes and outcomes. Assessment can be seen as an unwanted chore that strengthens the need for educators to tackle it to promote powerful student learning. Assessment is for grading and certification purposes, and it is important that this reaches acceptable levels of reliability and fairness. Students are best served when they develop meaningful learning from the assessments they complete (Carless, 2005).

Multiple assessment formats exist in higher education, such as end-of-course student evaluations, dissertation defenses, and reflection assignments. The National Academies of Sciences, Engineering, and Medicine (NASEM) published *Supporting Students' College Success* (2017) identified further examples as biographical and personal essays. We are reminded that "these assessment methods tend to address implicitly some of the eight identified competencies, including behaviors related to conscientiousness, intrinsic goals and interest, growth mindset, and academic self-efficacy" (p. 85). The NASEM identified eight competencies related to success in college and degree completion, above the demonstrated effects of cognitive skills. The competencies help explain persistence in college across students from diverse backgrounds. The following eight identified competencies are designed to enhance student development and thereby boost academic engagement, academic success, and college completion rates; (1) Behaviors related to conscientiousness, (2) Sense of belonging, (3) Academic self-efficacy, (4) Growth mindset, (5) Utility goals and values, (6) Intrinsic goals and interests, (7) Prosocial goals and values, Positive future self (p. 39-40).

The NASEM identifies three measures of assessment quality as validity, reliability, and fairness.

> **Validity** refers to evidence demonstrating the extent to which the assessment measures what it is intended to measure and does so in a manner that serves its intended purpose(s).
> **Reliability** reflects the consistency, precision, and replicability of scores from a measure.
> **Fairness** refers to the validity of score inferences for all individuals and groups for the test. (p. 86-87)

NASEM's analysis of the quality of existing assessments of the eight identified competencies indicates there is room for improvement. Improvement may start with a professional approach to assessment development, considering new measurement options that mitigate existing deficiencies and includes the use of multiple measures and levels of analysis.

The National Standards and Benchmarks for Effective Catholic Schools (NSBECS) (2022) outlines standards to serve as a guide and assessment tool for Catholic school effectiveness and sustainability. Of their four standards, *Academic Excellence* allows schools to assess if their curricular experiences are "rigorous, relevant, research-based, and infused with Catholic faith and traditions" (para. 2). Specifically, Standard 8 states, "An excellent Catholic school uses school-wide assessment methods and practices to document student learning and program effectiveness, to make student performances transparent, and to inform the continuous review of curriculum and the improvement of instructional practices" (para. 3). Furthermore, Standard 8, Benchmark 8.3 advises, "Faculty use a variety of curriculum-based assessments aligned with learning outcomes and instructional practices to assess student learning, including formative, summative, authentic performance, and student self-assessment".

A deeper dive into assessment finds Levy and Levy (2022) providing a clear distinction between assessment *for* and *of* learning sharing with a religious perspective, "If we use assessment for learning

strategies well, students will be prepared to do well when it is time to do the assessment of learning" (para. 13). Additionally, they suggest that assessment for learning allows for failure, and invites growth, not shame. Assessment *of* learning tends to create a system that runs on rewards or punishments. Assessment *for* learning creates a culture of intrinsic motivation, responding to the role God calling them to him. Levy and Levy (2022) recommend a need for school culture that runs on the curiosity to learn about the world and discover God in it, or even just the joy of learning something new.

Finally, Levy and Levy (2022) provide eight strategies adapted from the work of Stiggins et al. (2004), to assess *for* learning, which shapes a deeper understanding and relationship with God than assessment *of* learning; (1) Provide a clear and understandable vision of the learning target, (2) Examine examples of strong and weak work with students, (3) Provide descriptive feedback, (4) Teach students to self-assess and set goals, (5) Design lessons to focus on one skill, concept, or strategy at a time, (6) Teach students focused revision, (7) Engage students in self-reflection and let them keep track of their progress, (8) Use assessment information to refine curriculum and guide instruction.

Assessment in Community-Engaged Learning Courses

Both students and communities can grow and transform in powerful, mutually beneficial ways when community-engaged courses are designed and implemented deliberately and equitably (Bradley, 1995). The Edward Ginsberg Center (2022) at the University of Michigan highlights several recommendations and resources to assess students' learning in community-engaged courses. The Edward Ginsberg Center (2022) suggests,

> 1. Use course goals to articulate specific values, attitudes, and skills you want your students to develop.
> 2. Facilitate reflection as a method of formative assessment.
> 3. Collect information to refine your teaching and assessment for future courses.

Reflection Assignments as an Important Assessment Tool

Reflection is an "activity requiring an individual to examine the way they have responded to a given situation to increase awareness of one's assumptions and to enable better or different actions in the future" (Ruland & Ahern, 2007, p. 81). It is an important teaching strategy when critical thinking is the goal, and the outcome of reflection is self-awareness and learning. The type of thinking required during reflection is known as metacognition, which is a cognitive strategy a person engages in before, during, and after performing a task, or "thinking about one's thinking" (Paul, 2001, p. 15). The reflective process is best when structured to provide an appropriate balance of challenge and support. In transformational learning, the teacher prompts reflection by providing dissonance-producing questions to adult students. Students are then guided in the process of reflection to ensure that they dig deep enough to become aware of their assumptions and attitudes (Ruland & Ahern, 2007).

Mezirow (2000) differentiates reflection into 3 types; (1) content reflection is thinking about actual experiences, (2) process reflection is thinking about how to manage experiences, and (3) premise reflection is thinking about long-held, socially constructed assumptions, beliefs, and values about an experience or problem. Moreover, premise reflection can be about assumptions held regarding self, cultural systems, ethics, or feelings and attitudes. "Reflection on and critiquing of present assumptions to make meaning of new information becomes transformative learning when it leads to a significant restructuring of a person's perspective" (Ruland & Ahern, 2007, p. 82).

Ruland and Ahern (2007) offer a variety of techniques for fostering reflection in the learning process including language use and writing as a method for describing observations and the importance of the faculty member/coach/mentor in working to establish habits of reflection. This is critical when learners do not naturally possess open-mindedness and willingness to be reflective. "Structured reflective exercises have been shown to be most successful in this situation" (p. 82). Questions or reflection prompts, seminar group discussions, and reflective journals provide a framework for guiding individuals in broadening and deepening their analysis of challenging situations. Changing contexts and exploring multiple perspectives create cognitive dissonance that can facilitate reflective thinking. Learning activities must be provided multiple times and regularly (i.e., before class, during class discussion, and at the end of such discussions). "These activities guide the reflective process of moving from content and process reflection to develop the highest level of reflection, premise reflection" (Ruland & Ahern, 2007, p. 82).

When opportunities for reflection are created, student engagement occurs, which is the essence of the metacognitive activity. Reflection is known as a personal and individualized process (Alt & Raichel, 2020). Therefore, faculty creating learning experiences dependent on reflection needs to be sensitive to issues of context and need to individualize their approaches based on diverse student situations. Faculty feedback must focus on the quality of reflection rather than the content or context. Faculty need to be flexible and willing to redirect planned classroom activities if they use in-class reflection activities and need to clarify for students through examples and directions while at the same time guarding against oversimplifying the process. Students need to be pushed to become comfortable with uncertainty and to look for deeper answers than they had in the past (Ruland & Ahern, 2007). Faculty that challenges their students in these ways is an ideal scenario, but offering feedback in a unique way, such as word clouds, can offer a detailed perspective. Importantly, Winchester-Seeto et al. (2010) reminds educators, "The process and assessment of reflection is clearly very different to other academic practices and careful consideration needs to be given to preparing both students and assessors for this complex process" (p. 73). The use of word clouds as an assessment tool can help with this process.

Definition of Word Clouds

Word clouds are a "special visualization of text in which the more frequently used words are effectively highlighted by occupying more prominence in the representation" (McNaught & Lam, 2010, p. 630). In

a word cloud, the grammatical and infrequent words are removed so that the image created reflects the import and recurring words in a section of text. The most frequently used words are then randomly displayed by size, according to frequency (DePaolo & Wilkinson, 2014). This allows a word cloud to represent the frequently repeated words in a simple visual way that is easy to interpret and understand. According to Sellars et al. (2018), "word clouds, also known as tag clouds or term clouds, are an emerging technology for analyzing qualitative data" (p. 51). These visually appealing designs have surfaced as a simple and engaging way to identify the usages and frequencies of words within a written text.

General Use of Word Clouds

Also known as *tag clouds* or *worldles*, word clouds have been shown to accurately reveal what a group feels or understands about a specific topic, situation, or project. Using word clouds at the beginning and again at the end of a class or project has been shown as a powerful strategy to assess growth, development, or change among the groups being measured (Denoyelles & Reyes-Foster, 2015). More importantly, word clouds are beneficial because they use verbatim terms from the audience and create visual imagery to better highlight the correlation between the group and the topic. Word clouds initially gained popularity on social media platforms to represent trending topics or hashtags (Miley & Read, 2011). As time progressed, word clouds became more utilized across a variety of industries, such as research, education, and management "due to the attractive visualization effects" (Perveen, 2021, p.1).

Another benefit of word clouds is the ability to use a diverse array of texts such as essays, interview transcripts, short answers, or written survey responses to produce a visual representation of the data. Due to a variation of color, text size, and arrangement, word clouds are developed and utilized by a wide range of individuals in various fun and innovative ways (Viegas et al., 2009). With visual representation, word clouds are an effective way to summarize data from the text in a worthwhile and appealing way. Word clouds are being utilized in organizational settings to help foster a positive work environment where the creation of a word cloud can "unite a team in making a concerted effort to engage staff members in positive thinking" (Sellars et al., 2018, p. 52).

In terms of education, word clouds can help with teaching, reading, and writing, along with assessing different subject matter (Le & Lauw, 2016; Perveen, 2021). It is noted that the keywords from different selections of text can be used as a cue for reading comprehension. In a classroom setting, word clouds are also utilized in a formative assessment of learning. Brooks et al. (2014), present a solution to the ongoing dilemma of analyzing short written responses. This solution employs the use of word clouds to "offer a quick visualization of aggregate text responses to reduce the burden of information overload" (p. 190). Brooks et al. (2014) also highlighted those educators in practice "have described having students construct word clouds from pre-existing materials (such as speeches, quotes, and web pages) to summarize and promote discussions in many fields" (p. 192). It is understood that technology of any kind (e.g., phones, laptops, tablets) is a normal part of student's lives now (Qayyum & Smith, 2019) and

it is suggested that "a word cloud application, which was introduced to create a visual and textual task understanding, support scaffolding for the students" (p. 1).

Word Clouds at the University Level

At the university level, word clouds are being used in a variety of educational situations. Critical thinking, sharing underlying thinking using illustrative examples, and connecting to a framework are enhanced when students utilize word clouds. According to Denoyelles and Reyes-Foster (2015), Word clouds "emerge as a potential strategy to support both critical thinking and engagement within the context of online discussions" (p. 3). Educators who are "striving to promote critical thinking and engagement in the online classroom, word clouds consequently possess potential as a pedagogical tool within asynchronous discussions" (Denoyelles & Reyes-Foster, 2015, para 6).

Word clouds have also been shown to improve students' academic writing. Baralt et al. (2011) found word clouds to be effective tools for writing reflections, brainstorming, and defining main ideas. Additionally, word clouds specifically helped students generate more vocabulary, new grammatical tenses, and higher levels of peer interaction. Perveen (2021) found word clouds were effective for reading and writing-based activities. Baralt et al. (2011) attempted to stimulate students' discussions about their writing with self-generated word clouds in a foreign language learning class. Denoyelles and Reyes-Foster (2015) found the word cloud "encouraged a more objective consideration of the text and facilitated the construction of meaning" (p. 7). Students reflected that the word cloud forced them to find particular words and dig deeper into their meaning to implement them later for their claims. Lin and Xie (2017) put students through a word cloud activity where their words were automatically generated by a blogging tool embedded in a blog website. They then engaged students in word cloud-anchored discussions where they compared word clouds of distinct groups including their own. A word cloud kept participants focused on important concepts and offered a self-monitoring mechanism to keep participants on track. Even though the effect seemed to have gradually faded away as learning deepened, the word cloud provided topic-specific knowledge for participants to jump-start with their Internet search on the research project (Xie & Lin, 2019).

Empirical Setting

Given the unique nature of the current research, it is important to offer an empirical setting of Gonzaga University student course experiences. The purpose of building a sports outreach[1] core curriculum and community engaged learning course at Gonzaga University was initially to bridge a gap in research with the Catholic ideology of "finding God in all things" (Kelly, 2015, p. 2) supported by Smith (2018). The Foundations in Sports Outreach (FSO) course was developed by one of the authors and is based on more than 10 years of research related to the sports ministry field (Smith, 2016; Smith, 2018; Smith, 2022).

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[1] The premise of sports outreach (also known as sports ministry) was established in a rich history combining faith communities with character-building aspects through sports participation. These efforts have shown benefits to individuals and religious organizations worldwide.

Sports Outreach in a University Course Setting

The primary purpose of the FSO was to provide social contribution to youth in the community. The course offered the opportunity to take part in structured physical activity programming before school, while also receiving a nutritional and biblical message that was in line with broad Catholic Church traditions and the mission of the university. The physical activity programming and nutritional and biblical messages delivered during the FSO centered on the specific Catholic traditions of the initiative's participants taking care of their mind, body, and spirit.

Core Curriculum. The University Core Curriculum at Gonzaga is a doctrine for undergraduate programs rooted in the question, "how do we educate ourselves to become women and men for a more just and humane global community" (Gonzaga University, 2022a, para. 1). The FSO course provided university students with a unique dual-core curriculum experience, encompassing social justice, and writing, and fulfilling the university's Center for Community Engagement criteria for community-engaged learning. Throughout their undergraduate journey at Gonzaga University, students explore annual themes and questions that contribute to their overarching inquiry, encompassing the following aspects: in year 1, they focus on understanding and creating; in year 2, it is about being and becoming; in year 3, they delve into caring and doing; and in year 4, they contemplate imagining the possible. University core courses are designed to "intersect with the core themes and extend students' appreciation for the humanities, arts, and social/behavioral sciences" (Gonzaga University, 2022a, para. 2) with specific designations including writing-enriched, global studies, and social justice courses. Faculty who want to teach university core courses must attend university core development seminars and apply and participate in a peer-reviewed process before their core course is approved.

Writing-Enriched. Writing-enriched courses aim to enhance students' writing skills through various techniques, fostering competencies through both informal and formal writing assignments. These assignments include peer and instructor feedback and may revolve around personal reflections and experiences, sometimes guided by prompts on social justice topics.

Social Justice. Social justice courses address social justice concerns, equipping students with analytical tools to understand and respond to institutional injustices across various systems. These courses also support direct engagement with marginalized communities, as exemplified by the impact on students from low-income backgrounds at a Catholic elementary school lacking physical education resources.

Community-Engaged Learning. Community-engaged learning represents an educational approach that combines valuable community service with guided instruction and reflection, aiming to enhance the learning journey, foster civic responsibility, and empower local communities. This approach integrates with and enriches the academic curriculum or the educational aspects of the participants' community service programs (Gonzaga University, 2023).

Partnerships with local organizations and administrators were established to create the FSO course that would host a before school physical activity program. The process began with the Catholic Diocese's approval and collaboration with university representatives and one local Catholic elementary

school. After two weeks of training and safety measures, university students led a ten-week physical activity program at the school, involving a variety of activities, station rotations, also including a warm-up, cool-down with hydration and nutrition as well as biblical messages. Smith (2018) noted,

> Many of the students who participated in the program come from low-income families and the school does not have the resources to provide a full-time physical education teacher or other organized extracurricular activities. The principal stated, "A program like this will benefit so many of our kids. Many of these kids come to school with an empty stomach and not having the opportunity to simply play in a back-yard. (p. 285)

Methods

Technological advancements have reached heights that were unfathomable just a decade ago. Like the evolution of technology, educators should embrace more technological opportunities that progress assessment methods, especially tech that that fosters genuine trust from students as they grasp of course materials. Unfortunately, there is a lack of educator-friendly solutions that facilitate authentic presentations of students' comprehension without external factors that may not accurately reflect their true understanding of the subject matter.

The current research utilized a qualitative word cloud method to assess written reflections of college students at a religious university to offer deeper insights into their experiences in a community sport and physical activity social contribution setting. The foundation of these experiences is in line with two of three reflection types noted by Mezirow (2000), (1) thinking about the experience; and (2) reflecting on the notion of how the experience may have affected the understanding of certain assumptions, beliefs, and values of the experience. The purpose of a word cloud assessment for the current research was to break down narratives from FSO course student course reflections. The benefits of this process were to offer instructors and future students' deeper insight to understand if course objectives were being met. There are many benefits of such an assessment tool even "a quick glance at a word cloud will provide the reader with a quick overview of the keywords and main themes or topics in text," (Qayyum & Smith, 2019, p. 8), such as a student reflection assignment.

Course Objectives

The FSO course previously used traditional course outcome, objective, and assessment processes such as research papers, classroom discussions, formal written reflections, and classroom and on-site observations. For the purpose of the current research, a final, anonymous, written reflection was utilized to incorporate the use of the word cloud method to gain additional perspective of student perspectives of the experiences in a community-engaged learning course from the final reflection assessment.

Data Collection

Through the FSO course, Gonzaga University students learned and experienced more about how they could get involved in contributing to the societies in which they live. They used sport as a medium to connect with others with whom they may not normally engage. At the end of the semester, students were asked to reflect on their time in the course and their time contributing to their community with

elementary school students. Values from the university mission, core curriculum, and community-engaged learning were broken down into prompts. Students responded to each prompt on how they were impacted physically, mentally, emotionally, and spiritually. Participation was voluntary and students could respond to all questions, some, or none. All responses were provided to the instructor in an anonymous format. This format was chosen based on multiple studies indicating that anonymity provides individuals with the freedom to express themselves more honestly and with reduced anxiety, often resulting in increased levels of candid and constructive feedback (Lu & Bol, 2007; Macleod, 1999; Robinson, 1999; Stone et al., 1997; Zhao, 1998). A descriptive-level assessment from the reflection and above-average responses from the quantifiable student course evaluations found the experiences of each student were beneficial. However, the current research intended to offer a deeper level of understanding and assessment using a word cloud method to offer a rich perspective of student experiences in the course.

Each student over three semesters completed multiple peer and instructor-reviewed reflection assignments. Each semester concluded by asking all students to complete a final written reflection based on their experiences in the course. Students had approximately two weeks to respond to the prompts before submission. Once they were complete with their final reflection, students submitted their hard paper copy of this reflection to the program assistant of the academic department where the FSO course was housed. Students inserted their paper copies into an unmarked and secured envelope. Students then signed a document stating they submitted their reflection. Once all student paper copies and signatures were collected, the program assistant randomly placed them into another unmarked and secure envelope and delivered the envelope and signature sheet to the course instructor. This process was to ensure the confidentiality of the student's reflections. All reflections were transcribed verbatim to a secured Microsoft Word document.

Data Analysis

From this primary document, four separate documents were created based on the specific prompts that students were asked to reflect on including, (1) Physical, (2) Mental, (3) Emotional, and (4) Spiritual. A copy and paste process was conducted from the primary document and placed in an appropriate reflection topic document. There were four documents inserted into the four separate word cloud generator procedures.

A word cloud generator was selected. There are multiple options for word cloud generators on the world wide web, and several generators were piloted to eventually select one generator. Samples of written reflections were uploaded to several word cloud generators to ensure reliability. After five popular sites were evaluated, the Word Cloud generator selected for the current research was TagCrowd. This generator was selected based on ease of use, presentation of results, and other data analysis options such as word frequencies. The TagCrowd site offered several features for the user the ability to highlight expressive words (e.g., active, faith, and life) and remove cluttering words (e.g., class, semester, and course). To maximize the importance of words shown in the word clouds below, we reduced the number of words shown in the word cloud to 20 words and set the minimum frequency to 10 words. The use of word clouds as a unit of data collection and examination is a form of

content analysis. Merriman (2009) offers insight into content analysis that can be linked to the purpose and benefits of word clouds as an assessment tool.

> The unit of measurement in this form of content analysis center on communication, especially the frequency and variety of messages, and the number of times a certain phrase or speech pattern is used. In its adoption for use in qualitative studies, the communication of meaning is the focus. (p. 205)

Once the word clouds were created, the course outcomes were used to evaluate if words, expressions, or themes aligned with the course outcomes. Specifically, knowing word clouds use word frequency to display words, the size of the word provided the ability to judge how often the students used certain words. The bigger the word, the more frequently it was used. Furthermore, comparing the biggest words to the course outcomes allowed for assessment if students reflected on their growth, understanding, and expectations.

Results

The results focused on the written reflection assignments from 46 students enrolled in the FSO course over three semesters. The students consisted of 20 sophomores, 15 juniors, and 11 seniors from several majors and minors across the university. Throughout the course, students regularly submitted reflection assignments based on their direct experiences with the FSO at a K-8 private Catholic elementary school. Each university student worked approximately 20 hours with elementary students during the semester. Directions for these reflection assignments were based on course content covered up to that point in the course. This was important to note as students had previous written reflection experiences in the FSO course as well as previous courses taken based on the requirements of the University Core Curriculum. The students were asked to reflect on their experiences during this course based on how they personally developed physically, emotionally, mentally, and spiritually. Each reflection was written in a paragraph narrative format by each student. All students of each semester participated and wrote reflections for each prompt.

Table 1 offers insight into the number of words offered for each reflection prompt and the most frequent word used in those areas. This table suggests that students in the FSO course were affected emotionally by their experiences, then spiritually, and so on. Figure 1 represents results from students' final written reflections inserted into the TagCrowd word cloud generator for each prompt. Each word cloud is accompanied by two quotes from university students that commonly represent each written reflection prompt and the contents of the Word Cloud.

Table 1
Word count

	Word Count
Emotional	7862
Mental	3110
Physical	2699
Spiritual	4245

Figure 1
Word cloud results by prompt
Emotionally

Prompt	Student A response	Student B response
How has the FSO course helped you personally develop in the following ways: Emotionally	*Happiness and comfort were the two most frequent emotions that I felt during the class.*	*I found myself enjoying the work I did but looking for a greater sense of purpose, I wanted to do something that positively affected people in the community. This course validated the importance of providing social contributions in the community and that this can be done through sport. This class helped me confirm that I want to work in community relations or another service-focused job, which eased a lot of uncertainty and worry in my life.*

Spiritually

able athletic church **class** community experience **faith** feel **god** grow helped
learned **life** people person really **religion** **religious**
spiritual think

Prompt	Student C response	Student D response
How has the FSO course helped you personally develop in the following ways: Spiritually	*My faith grew because I saw how theirs did.*	*Coming from a different faith background, this course allowed me to open my mind to new ideas and how I can take different faiths and religions and apply similar big-picture concepts to my own life.*

Mentally

activities change helped **kids** life **mentally** morning
physical positive think work

Prompt	Student E response	Student F response
How has the FSO course helped you personally develop in the following ways: Mentally	*I was able to enrich my mind through this course by understanding its significance within the broader Catholic community.*	*I learned the importance of being mentally present when we were with the children at the Catholic elementary school.*

Physically

able **active** early helped **kids** morning **physical**

playing start wake work

Prompt	Student G response	Student H response
How has the FSO course helped you personally develop in the following ways: Physically	*This program has helped me develop physically outside of the classroom environment. During volunteer days I was more physically active than any other day of the week.*	*Physically, I moved my body a lot by playing with kids and helping them go through the activities.*

Discussion

The purpose of the current research was to offer insight into a unique university course assessment method to determine if course objectives were met. Students were given the opportunity to offer reflections on their experiences in the sports outreach program and working with children in a before-school physical activity capacity. This process is encouraged by the Gonzaga University mission statement that instills in its students "the capacities and dispositions for reflective and critical thought, lifelong learning, spiritual growth, ethical discernment, creativity, and innovation" (Gonzaga University, 2022b, para. 3). University students were given four prompts at the end of the term to reflect on their experiences. These reflective results were inputted into a word cloud generator.

The purpose of this was not only to understand if students were meeting the primary objective of the course, but also fulfilling elements of the mission of the university in which, "Gonzaga models and expects excellence in academic and professional pursuits and intentionally develops the whole person -- intellectually, spiritually, culturally, physically, and emotionally" (Gonzaga University, 2022b, para. 2). Assessment research is fruitful when it comes to the opportunities to learn from student's experiences in a quantitative and formative understanding (e.g., student course evaluations) (Adkins, 2018; Bubb et al., 2013; Robinson et al., 2014; Stull et al., 2011)

While this research is important, unique reflective assessment, such as the use of word clouds, is timely and necessary. Carless (2005) suggested that when given the opportunity to reflect, students use this opportunity to express their positive and negative experiences in detail. As the results suggest, students were meeting the primary course objective related to social justice, community-engaged learning, and

fulfilling the university mission. We are reminded by Ruland and Ahern (2007) that there are limitations in reflective assignments where a student may hold back their true feelings about their experiences, however, the method of the reflection assignment for the current research offered the opportunity for students to submit their work anonymously which offers a sense of results quality through validity, reliability, and fairness (NASEM, 2017).

One could argue that assessment focused on a system of rewards and punishments, such as assessment *of* learning (Levy & Levy, 2022) or constant tests and quizzes defeats the purpose of many University mission statements expressing lifelong learning for their students. It then becomes refreshing for students (and teachers) to have the opportunity to communicate experiences in an assessment *for* learning method, where curiosity is paramount, and all stakeholders are learning from one another (Levy & Levy, 2022).

The reflection process and subsequent word cloud results were in line with all three of Mezirow's (2000) reflection types. Overall, all student reflections were discussed about actual experiences in working with youth at the local Catholic elementary school. Many cases were specific experiences when students were working one on one or with small groups in the physical activity setting. In relation to Mezirow's (2000) third reflection type, each reflection prompt offered students the opportunity to express assumptions, beliefs, and values as these prompts were foundations of the Gonzaga Mission Statement.

Lastly, the use of a word cloud generator may provide valuable time back to course instructors. For example, instead of reading multiple papers and manually looking for words, themes, or expressions to assess if students demonstrate growth or course outcomes, the word cloud generator's function is to take many papers and/or words to display word frequency by size. Therefore, in one glance, a course instructor can compare the biggest words to the assessment expectations.

Recommendations and Limitations

Historically, college and university formative and/or summative assignments have been tests, presentations, and written papers. These assignments are often linked to course objectives and may demonstrate the student's knowledge of key concepts and learning. With Gonzaga University wanting students to be lifelong, deeply reflective citizens, the use of discernment in assessment and evaluation methods may provide this development.

Recommendations. Word clouds allow an authentic method for teachers and students to reflect on the sustainability and intricacy of their reflective learning moving forward. Furthermore, we make three recommendations.

1. We recommend instructors analyze their syllabi for opportunities to use word clouds through student reflection. While this study used word clouds during a summative task, they can be incorporated throughout any assessment period such as in the form of an exit ticket (formative assessment) early in a course to gather student reflection before moving to a new concept.

2. We recommend instructors use word clouds while analyzing their student course evaluations to look for alignment in reflection on teaching and learning. Words and themes found on both items may allow for confirmation of course objects or opportunities to modify teaching strategies.

3. We recommend students be presented with the assessment word clouds to allow for deeper reflection of their experiences compared to their classmates. These comparisons may allow students to confirm their feelings and reflections on many aspects gathered through a reflective word cloud. If feelings contrast with their classmates, students could be encouraged to discuss further with their instructor.

Limitations. The current study is not without limitations. For instance, the setting of this research took place at a private Jesuit college in the United States that uses reflection often and throughout students' courses and programs therefore, the results may differ at diverse types of post-secondary institutions. Secondly, this study was an analysis of the FSO course (over three semesters) with one professor in a community engagement class, the results may differ in other courses and programs with different faculty. Finally, while the end-of-the-year experiential assessment was used for the current research, a limitation was found for those writing the final reflection and not having the opportunity for further discussion of the results of the reflections that produced word clouds.

Conclusion

Word clouds provide meaningful feedback and assessments in various university settings. For starters, word clouds can be used to provide formative assessment feedback to students, and to identify common themes in student work (DePaulo & Wilkinson, 2014). Word clouds condense substantial amounts of assessment data based on frequencies, and present a holistic, themed picture that is easy for the user to understand and comprehend, and therefore use in assessment decisions. word clouds provide instant graphics to represent student knowledge for formative and summative assessment purposes and can be used in the activity, course, or program assessment (DePaulo & Wilkinson, 2014).

In terms of academic writing, word clouds can benefit instructors by allowing them to analyze large bodies of written text from many students in an abbreviated time (Qayyum & Smith, 2019). More so, word clouds are helpful "to reduce the burden on instructors for a speedy and fair evaluation" (Jayashankar & Sridaran, 2016, p. 2399). Word clouds can be used in the assessment to gauge the use of keywords in student responses to essays or short answer questions (DePaulo & Wilkinson, 2014). Word clouds have been shown to be useful to instructors in helping to understand how students are developing and what they are getting out of experiential learning (DePaulo & Wilkinson, 2014). Jayashankar and Sridaran also noted that "technology is swiftly progressing in our teaching and learning. Word cloud retains its plainness in use, but the sophistication of data analysis has made it powerful" (p. 2384). The amount of data involved in assessments is astronomical, so utilizing keywords to create word clouds helps educators by creating a partial assessment tool.

Easy to create, quick to share, and powerful visuals, word clouds illuminate the students' own words and allow teachers to see the impact of their course. With so many programs and universities surveying students to determine learning impact, word clouds used in this course to share the main opinions of the students prove that growth has happened for the student's mind, body, and soul.

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