

# Lessons Learned in Virtual Supplemental Instruction: Enhanced Engagement to Support FSG Leader Transformation

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## Abstract

This paper explores virtual teaching and learning innovations in Facilitated Study Group (FSGs) delivery at the University of Toronto Mississauga (UTM). To increase access and representation in an already successful in-person Supplemental Instruction (SI) program, we seized the opportunity during the COVID-19 pandemic to create new alternatives by introducing Virtual Facilitated Study Groups (VFSGs). We have since introduced hyflex options in peer-led programs that include a combination of both face-to-face (F2F) and online SI Instruction. With new format options in our program, we recognized the need to re-examine and reflect on the metrics used for measuring outcomes and impact. Supported by the Institute for the Study of University Pedagogy at UTM where SI is administered, a “virtual cineplex” FSG platform was developed to offer a unique and efficient access point for students to network, congregate, and self-select new variations and opportunities in FSG programming. Prior to the pandemic, a specialized 12-week undergraduate experiential academic course, *EDS325: Supplemental Instruction in Higher Education*, had already been introduced to enrich and deepen the training of FSG leaders (FSGs). The course is experiential in nature and requires a 100 hour internship in FSG instruction. This one-of-a-kind for-credit course engages FSLs in SI theory and scholarship while supporting post-graduate outcomes with a focus on transferable leadership skills and professional learning. In the winter of 2020, EDS325 made its debut as an online course and is now offered in both virtual and in-person formats. This paper tells the story of several lessons learned in hyflex program expansion as we reimagine the multimodal and multiplatform future of SI.

## INTRODUCTION

Supplemental instruction (SI) was introduced across university campuses in the early 1970s as an alternative approach to academic instruction. A voluntary offering, students participate in peer-led sessions that meet outside of class time in small subject and course-specific groups to work and study collaboratively. Post-secondary institutions have historically tied evaluation of SI to student enrolment and specific performance metrics, most often looking for improvements in GPA and university retention. However, as Vijay et al. explains, “It is critical both to identify at-risk students and implement evidence-based instructional strategies and interventions [...] with recent literature showing that cognitive, affective and demographic characteristics all contribute as risk factors” (2021; p.552). Alongside recent hyflex opportunities in SI, we propose the use of alternative metrics that also focus on the “affective” domain to better understand FSG experiences and, in particular, FSG leader experience. Focusing new metrics around how FSG leaders experience

their role fills an important gap in research around the potential for SI impact. We decided to look at *affective* characteristics cultivated through the frame of Debebe's "psychological capital" (PsyCap) criteria described in the acronym "HERO" - **H**ope, **E**fficacy, **R**esilience and **O**ptimism (2017). With a robust analysis and correlative study on leaders, we can learn more about hyflex SI programming and its potential.

In response to the COVID-19 pandemic, the University of Toronto Mississauga (UTM) successfully launched Virtual Facilitated Study Groups (VFSGs) that served 2,409 students through the instructional efforts of 271 Facilitated Study Group Leaders (FSGLs) supporting 64 undergraduate virtual non-credit courses over the Fall 2020 and Winter 2021 academic terms. By moving UTM's existing Facilitated Study Group (FSG) program from in-person to hyflex we expanded our ability to offer alternatives as students sign up for a combination of in-person and virtual learning opportunities. During development, we wanted to ensure the level of access and efficacy in this already well-established and successful program would be continued. Seizing the opportunity during the pandemic to move forward with the offering of hyflex alternatives in SI, we sought to focus more specifically on the experience of virtual FSGLs as they adjusted to online SI Instruction on our campus. Acceleration in SI program-level innovation took place through a trial-and-error process with our FSGLs helping to remove instructional restraints while "shaking loose" important new research questions to inform SI theory and practice. The following paper will share our progress and some key milestones fostering transformative learning experiences in FSGL training.

### **Reassessing Metrics: Psychological Capital (PsyCap) as a Metric for Impact**

First developed at the University of Missouri-Kansas City in 1973, SI in its inception was structured as an in-person, peer-to-peer, and co-curricular academic support program. Gaining considerable momentum through the 80s and 90s, students on college and university campuses recognized the value of engaging in study groups in the judgement-free comfort of peer-to-peer support. Enthusiasm for these programs was complemented by growing evidence of success in reducing course failures (Zaritsky 2006). Unlike tutorials where the Teaching Assistant's (TA's) instruction and related grading protocols frame the experience, SI is non-evaluative and peer-focused. Impact data shows overwhelming success in improving GPA performance in difficult or high-attrition courses (Zaritsky 2006). Terrion and Dauost point out that FSG can be especially helpful for first-year students as their persistence in school can be directly linked to engagement with faculty and peers: the more interactions that first-year students have, the more likely they are to remain enrolled in university (p. 312). In designing effective SI programs, educational developers, faculty, and staff continue to seek evidence-based guidance to implement high-impact programming. While peer-led FSGs on college and university campuses have historically been a proven strategy for retention ensuring university students stay in school, we knew from anecdotal evidence on our campus SI impact goes beyond the "GPA boost" metric as students and FSGL leaders describe unique and lasting impact of the socio-academic network they build, the work-integrated learning they experience and transferable leadership competencies they adopt. As a result, UTM is now turning its attention to affective qualities and graduate outcomes starting with a focus on FSGL leaders, to assess to what degree students leading our program experience feel changed and transformed through the experience of leading instruction.

Inadvertently, the transition of the FSG program to a virtual environment and hyflex delivery model provides an opportunity to rethink the goals of the SI program more generally around how it might be evaluated. We were initially guided in our thinking by Universal Design for Learning (UDL) a pedagogical framework we had employed in the transition to hyflex to help us think about and promote inclusive and equitable environments for all learners (Lee 2021; Ahhyun 2021). We were excited by the possibility of offering learning alternatives that would increase the number of SI options available to students using various “on-demand” practices. We saw this as a positive first step to increase opportunity and access. The conceptual framework of UDL which advocates for the removal of barriers so that all students can experience meaningful engagement in their learning environment by incorporating multiple means for students to (1) engage with content, (2) represent content, and (3) express skills and knowledge. UDL frameworks help us to see that not all engagement platforms will be optimal for all learners. We do know that SI programs, separate from the classroom experience in a credit course, already offer alternatives and are rooted in multiple representations. (CAST 2018). Tobin and Behling further highlight the intentionality that students bring to the learning experience when choosing to participate in SI, and how the openness and co-construction of knowledge can increase the personal connection students have to the material (p. 92).

Initially only offered in-person, the urgent and immediate shift to remote delivery pushed FSGs through several iterations across different platforms. We began by testing FSG delivery on the learning management system BbCollaborate embedded into the university’s preferred platform Canvas. Our program managers and developers were especially concerned about data protection and privacy management, and these were the safest options at that time. Limited by some of the tools and functionality, we transitioned after term one to test SI delivery on the platform Zoom as their safety and functionality became a more convincing option. In piloting these different technologies with our FSG Leaders, we were able to learn processes for training and supporting FSGLs within this new learning space. This involved focusing on leveraging how the distinct features of software enabled virtual teaching pedagogies and ed tech could be used. While we saw UDL as a useful framework to expand our ideas about alternatives, we realized we had limited ways to understand how leaders were responding to uncertainty, volatility and complexity of the times.

We became curious to know more about how our leaders were feeling stepping into these new roles of responsibly, guiding their FSG participants through uncertainty while modelling flexibility and self-efficacy. We noted that FSG leaders involved in this experienced enhanced engagement as we watched them respond, invest and restructure their programs to meet student learning needs. In noting the outcomes of these experiments in hyflex learning, we understood immediately that prioritizing PsyCap as an outcome of FSG training should be prioritized. As Debebe outlines, positive PsyCap is a systematic process for developing learned resourcefulness. In this process, the instructor intentionally cultivates hope, self-efficacy, resilience, and optimism in the student (Debebe 2017) to eliminate deficit thinking and, in turn, intervene with ascription. Ascriptions are the beliefs that students hold about themselves and their potential, as cultivated through their socio-environmental experiences. As we saw FSGLs succeed and adapt to new technologies, applying the model of PsyCap would shape our goals and aims for leader training and alertus to specific “look-fors in professional development.” Consistent with Lozada (2017), our experiment prioritized a better understanding of how “SI facilitators experience transformative learning and

the nature of civic engagement within their student leadership roles” (p. 80). Data shows many of our FSGLs leave university and continue to significantly contribute within their community and professional roles post-graduation. We hope to learn more about the impact of the FSG program on those talent trajectories and, in turn, expand our initial Universal Design for Learning (Lee 2021; Ahhyun 2021) framework accordingly.

### **A Framework for Leadership Engagement**

The evolution of the FSG program at UTM is indebted to benefactor Robert Gillespie, who in donating funds to help found SI on our campus had this to say of his university experience: “I felt too much emphasis was placed on learning by rote and not enough on reaching conclusions based on deduction, experience and collaborating with others.” With this in mind, our specialized 12-week undergraduate course *EDS325: Supplemental Instruction in Higher Education* was created to extend collaboration opportunities for FSG leaders in a course that has been successful in attracting highly motivated FSGLs across the university’s disciplinary programs. The course has become an important training ground for high performance as learning outcomes were shaped to match and promoting PsyCap outcomes. FSGLs participate in self-advancement as they learn about themselves, their purpose, and the unique contributions they can make to the broader community while practising and applying skills of professional facilitation, public speaking and learning about theory and research around group dynamic, engage in equity challenges and critical thinking as they put into practise the experience in the use of educational technology. Operated in collaboration with the Program Manager and taught by two professors in the Education Studies program, student leaders taking the course practice crisis management and participate in theory, research, and in the application of case studies through problem-based learning. In this hyflex course, there is a focus not only on the obvious inventory of virtual pedagogies (e.g., using breakout rooms, engaging with the chat) but on the experience and outcomes of the FSGL through the lens of reflective learning.

Mezirow’s pioneering work in the field of transformational learning found that the integration of critical reflection and peer review could lead to a transformation in the way an adult learner constructed their understanding of knowledge (1991). Within this theory, frames of reference that are constructed through previous experiences are challenged each time individuals encounter new experiences. When these new interactions question our established frames of reference to the point of questioning the presuppositions on which the references are based, then the intervention could lead to a revision of the initial frame of reference, thus *transforming* them. Mezirow’s theory has been used to substantiate the use of critical reflection in a variety of learning environments, from the development of the Scholarship of Teaching and Learning (Kreber 2006) to how transformation can be used to enhance other learning theories, such as threshold concepts (Hodge 2019).

In pivoting to a virtual format, we were initially excited by the many alternatives that we could offer our FSGLs. We continued to pursue, however, what this shift to remote and now hyflex learning might mean for student engagement. Enhanced engagement is a view of academic success that goes beyond what needs to be learned and focuses on how we learn, taking into account identity, learning processes, and community needs. It is centered on a co-constructivist approach that involves promoting opportunities for students to become active learners through a process of

civic involvement that focuses on the transformation that takes place from those experiences. Enhanced engagement fosters a sense of collective and individual identity-building where students see their role as participants in the collaborative reconstruction of knowledge.

Indeed, the type of student engagement achieved through FSGs is of particular interest to us in this current study as we had witnessed many of the same benefits reported in recent studies on student engagement (collated in Dawson et al. 2014), including enhanced social relationships through student-to-student contact (Mahdi 2006) as well as a reduction of anxiety towards difficult courses due to the supportive environment and increased opportunities to talk through challenging course material with others (Bronstein 2008). Additionally, we identified a connection between agency and success, wherein the voluntary aspect of FSGs afforded students a sense of control over their learning experience, resulting in a small but significant contribution to success in post-secondary education (Richardson et al. 2012).

### **Explorations in Virtual, In-Person, Hyflex Delivery**

As we experimented with online platforms and technologies to create new learning environments for our students and FSGLs, we discovered that our own evolution of platform and approach supported and nurtured resilience in our leaders. To understand where we might go next in FSG, we thought it important to first look at the past. Innovation in SI has been going through a slow-paced but constant evolution since its inception, moving from in-person learning among small groups, shifting to flipped classroom experiences in some schools, and now arriving at a hybrid configuration of interactions on college and university campuses. As Alden (2017) points out, recent innovations in SI have come naturally alongside the proliferation of social media and advent of online learning complements that enhance what traditional SI provides. She explains, “Innovations include (but are not limited to): video lectures, practice exams, and promotion of group collaboration among students. Through the use of platforms including Facebook, Twitter, Piapp, and Slack, the SI session can be held almost exclusively online and provide just as much if not more benefit to the students involved” (p. 2007). As new options open up further alternatives for SI, we can see how a targeted preparation of FSGLs would be essential to the effective, sustainable delivery of FSGs within a virtual environment, and that establishing such a foundation now would ensure the success of the program in the years to come.

The University of Toronto Mississauga “virtual cineplex” FSG platform, named by its designer as a metaphor for the multiplicity of options that one can choose from in this online, on-demand space, provides a portal by which students could easily enter and join FSG classes offered around the clock in a multitude of disciplines. Providing alternate formats to engage with FSGs, including an accessible virtual format, created opportunities for a much wider population of students, bypassing the commuting delays that often impact in-person scheduling. At the same time these new integrations presented challenges to our leaders to adopt to new ways of doing things. For example, initial data indicated that allowing cameras to be turned off during FSGs was helpful for students who wished to remain anonymous on Zoom and “listen in” on conversations. However, what FSGL’s deemed an inclusive practice, it turns out, significantly reduced levels of meaningful engagement as visual communication cues were eliminated and networking and community building opportunities were minimized. Leaders had to find other ways to achieve the same results as they had experienced during in-person FSGs,. These setbacks led to ongoing testing of different

and new virtual pedagogies and, by default, created work-integrated real-world simulations of problems that our leaders had to solve. With findings from each new prototype of FSG development, leaders understood that new technology in SI was never going to fix all pedagogical problems. They readjusted their expectations and set out to understand and reflect on practice as they learned more. We saw in this how digitization and new tools could be adopted with the intention to enhance our aims and amplify opportunities for our leaders to work in a safe trial and error environment where they could collaborate and reflect and, in turn, build PysCap as transferrable skills future problem solving. Despite the benefits of VFSGs, and this resulted, in some cases, to more inconsistent attendance than among in-person iterations of FSGs. Simultaneously, however, the additional skills developed in VFSGs, including mastery of technology, helped us to reconfigure ideas about how collaboration occurs online and to define essential competencies we wanted to share with our virtual FSGLs. On the other hand, many students reported increased engagement in their VFSGs due to the multiple modalities of engagement, including texting via the chat feature. The availability of these features allowed students to participate more freely and suggest answers more readily, and with greater confidence, regardless of their certainty towards their answers. Multiple studies suggest that greater, rather than lesser, confidence in an incorrect answer will increase the likelihood of remembering the right answer when it is corrected (Metcalf 2017). The VFSGs provided enough instances of greater access to our SI offerings, so as to support our pursuit of new visions of student engagement in future SI iterations.

### **Enhanced Engagement Opportunities**

We quickly began to see FSGLs as our co-constructors in hyflex remodelling. With that, a new “constellation of opportunity” (see Figure 1.1) has emerged in our program. In the process, we saw a clear path for nurturing programs that focus on what Portelli describes as the “curriculum of life” (p. 59). For the past decade or more, McMahan and Portelli have asked questions about what student engagement looks like and feels like, examining and interrupting popular discourses on this topic. Consistent with their view of engagement, we see opportunities to address not only the technical needs of our new virtual environment, but the need to foster transformative learning experiences. We broke from training approaches “simply as a matter of techniques, strategies or behaviours” and instead built into the program more “intrinsically the purpose of democratic transformation where everyone has an opportunity to bring their needs to the table and participate in understanding the curriculum of their lives” (McMahan & Portelli p. 70). This view of the FSG program allows us to expand from a minimalist or homogenistic perspective where student engagement is simplified down to a “correlation between engagement and academic achievement” (Finn & Voelkl 1993; Newmann, Wehlage & Lamborn 1992; Steinberg 1996, from Portelli 2004). Instead, we see the FSG environment as one in which each stakeholder, from the EDS325 course instructor to FSGLs and Program Assistants, is involved in unwrapping, unwinding, and reconstructing knowledge together. FSGs evolve according to what each individual brings to inform individualized mentoring, and related competency development in our leaders. Figure 1 shows the new constellation of opportunity we provide for leader development. Step 1 involves access to participation in FSG sessions. Step two involves providing opportunities for those students who have taken the FSG to then sign up for the hyflex EDS 325 course and experience training sessions on leadership and PsyCap topics. Leaders can then move into the teaching assistant role in a paid position within the EDS 325 Supplement Instruction course and/or become

an RA and program assistant in the program. As a result of program assistantship, they can be involved in research in SI and receive one-on-one mentoring to support post-graduate pathways. We know that students enrolled in the same course have the opportunity to study together in peer clusters, the process facilitates the development of academic skills (Hurley & Gilbert 2008). The weekly FSG leader course guides the group through problems and issues that participants identify need focus. WE continue to want to know more about the potential lasting impact these learning communities for our FSGLs have on talent trajectories as FSGLs learn alongside their peers in an active learning setting that utilizes team-based learning (TBL; Silva et al. 2021)

## Figure 1.1: Constellation of Opportunity in Supplemental Instruction University of Toronto Mississauga

Figure 1.1: Constellation of Opportunity for FSG Leader Development  
University of Toronto Mississauga Supplemental Instruction Program



## Cultivating Psychological Capital (PsyCap) in a VFSG Environment

As Lozada (2017) proposes, “Providing students an opportunity to serve in a leadership role can lead to the actualization of transformative learning experiences, which may materialize in a heightened development of skills that are transferable to future academic, professional, and civic aspirations” (iv). Building a community for FSG leaders has really been a response to students needs through community. We are cognizant that cooperative learning goes beyond physical proximity or the mere sharing of information in a group setting, and that it needs to be structured in order to be effective (Johnson & Johnson 2002). In the virtual learning environment, the importance of structuring cooperative activities is heightened due to the increased sense of isolation students feel when they are not sharing a physical space. Students and instructors have reported feeling “disconnected” in virtual classroom environments, and offering opportunities for true collaboration can help to mitigate these feelings. To address this, we instructed FSGLs on the five basic elements of cooperative learning: (1) positive interdependence, (2) individual accountability, (3) face-to-face promotive interaction, (4) social skills, and (5) group processing

(Johnson & Johnson 1989, 1999a; Johnson, Johnson & Holubec 1998a). The elements we found to be particularly helpful in the VFSG environment for leaders were positive interdependence and face-to-face promotive interaction. Positive interdependence relies on the perception that students' success is inextricably linked to the success of others: individuals succeed when the group succeeds and vice-versa (Johnson & Johnson 2002). In our VFSG environments, for example, we promoted activities in which each group member was assigned a portion of an overall assignment, as in the jigsaw cooperative learning strategy. By coming together to share and discuss their findings, students discover the completeness of the activity. Learning is "complete" only when the group comes together and all of the individual contributions make up the whole.

Face-to-face promotive interaction involves encouraging the collective as they complete their tasks, as well as facilitating the completion of the tasks. Both are employed in order to reach the group's goals (Johnson & Johnson 2002). The virtual iteration of this cooperative element is fundamental to establishing and maintaining not only group morale but group cohesiveness as they work on cooperative tasks together. We found that frequent and targeted promotive interactions helped the students stay-connected. Other techniques such as committee-building, lesson study, breakout rooms, micro-teaching, and guest speakers have all become key parts of our FSGLs' learning experience.

## CONCLUSION

At the University of Toronto Mississauga, we are presently in an important trial-and-error phase of program-level innovation in SI. This was the result of the hard pivot to VFSG and the new for-credit academic course that we adopted as part of SI instruction. We know that the FSG program on our campus attracts students who are already on a leadership path and the offerings we provide are designed to amplify the very qualities that attract students to the program.

George Couros, in his book *Innovate Inside the Box*, explains that reflection is a key component of any kind of process. Incorporating learning from past mistakes is an essential step in innovation (Couros 2019). In this paper, we have responded to Couros' suggestion by reflecting on what the future of enhanced engagement for SI leaders might look like while identifying challenges and constraints that we encountered while responding to new opportunities in hyflex delivery.

We wanted to know how FSG leader training is enhanced or limited by the use of virtual technologies and whether barrier reductions could be achieved by a virtual SI program that utilized multimodal approaches. We found that this innovation indeed augmented opportunity. Using a UDL framework to guide development, we applied criteria to assess alternatives in our programs, which helped us to recognize the need to better plan for learner variability in our student population. As David Gordon suggests, we can do this by providing students with options:

Options are essential to learning, because no single way of presenting information, no single way of responding to information, and no single way of engaging students will work across the diversity of students that populate our classrooms. Alternatives reduce barriers to learning for students with disabilities while enhancing learning opportunities for everyone (Council for Exceptional Learning, 2011 in Tobin and Behling, 25).

This virtual iteration of our SI programs *inadvertently* provided opportunities for multiple means of engagement, representation, action, and expression—namely, the main criteria of the CAST UDL guidelines (CAST 2018). Through this methodology, we continue to seek to uncover the degree to which these options have been beneficial and to provide a framework for how to *intentionally* incorporate enhancements into our SI FSG Leader training programs, thereby fostering more inclusive alternatives for all students.

The introduction of a new hyflex credit-bearing course for FSGLs in leadership and self-development added a significant opportunity for enhanced engagement. One focus that was important to us was to ensure that our FSGLs and Program Assistants were provided with adequate training in both VFSGs and in-person FSGs by utilizing the for-credit course to not only teach leadership theory and scholarship but to centre time in that class on strategic life planning that widen opportunities for civic engagement and the exploration of post-graduate pathways. Responding to the needs of our student FSGLs, many of whom apply to professional post-graduate programs in areas such as medicine, nursing, teaching, and law, saw the relevance in FSG instruction and virtual with the aim to focus learning outcomes and mentoring on affective domains by creating an environment both online and inperson that cultivates of PysCap

Thinking beyond the borders of both the classroom and the institution, a next step in understanding FSG leader experiences is to propose a longitudinal study to follow FSGLs post-graduation to understand the transfer of qualities and characteristics after university. Rather than focusing on the metric of GPA improvement in the student groups they serve, we propose using the four pillars of the PsyCap metric (HERO: **H**ope, **E**fficacy, **R**esilience **O**ptimism) to evaluate transferable qualities of leadership that our leader take with them in the characteristics associated with fulfillment, wellbeing, and thriving. The longitudinal study of these newly proposed post-graduate outcomes will allow us to better assess our unique FSG train the trainer program and more fully evaluate the potential of a 12 week course and hyflex alternatives as a means to foster transformational for FSG leaders.

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