How have Supplemental Instruction-Peer Assisted Study Sessions (SI-PASS) programmes adapted during the COVID-19 pandemic? Case Studies from four Higher Education Institutes in Ireland, Norway, the UK and Sweden

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Abstract

In this paper we look at the adaption of SI-PASS programmes during the COVID-19 pandemic drawing from four Higher Education Institutions (HEIs) as case studies: The National University of Ireland (NUI) Galway in Ireland, Nord University in Norway, Lund University in Sweden and the University of Manchester in the UK. The paper also focuses on the role of SI-PASS in student engagement in an extraordinary time. Attention is given to the numerous challenges that the SI-PASS teams have faced. For instance, how to engage students in an online environment or in a face-to-face setting with social distancing, training student leaders to hold online sessions, support of leaders, and enhancing the student participants' learning experience. Attention is also given to the potential benefits of online SI-PASS and lessons learned that can be incorporated in post-pandemic SI-PASS programmes.

Keywords: Pandemic, Peer Learning, Student Leaders, Supplemental Instruction, Peer Assisted Study Sessions

Introduction

Supplemental Instruction - Peer Assisted Study Sessions (SI-PASS) is an academic peer learning model often used to help students transition into, and within, higher education. This is done by engaging students in learning activities where they work together to understand challenging material in a course in voluntary, out-of-class group study sessions. The sessions are facilitated by trained higher year students who act as peer leaders. The training typically includes: facilitation

techniques and strategies, managing group dynamics, communication, learning theory and session preparation. Leaders are supported throughout their role by trained supervisors and are observed as part of the quality assurance and for their personal development. The observations are usually done a couple of times per semester in Europe, often carried out by trained senior leaders besides supervisors.

This paper addresses how four varied European SI-PASS programmes adapted when faced with the COVID-19 pandemic and what was learnt. The case studies also highlight, the unique possibilities that arose to experiment and reinvent SI-PASS, with student engagement in mind. SI-PASS is internationally well-established and is run at more than 1000 Higher Education Institutes (HEIs) in almost 30 countries (Power, 2010). The corresponding numbers in Europe are ~75 HEIs across 10 countries (Malm et al., 2021). The original objective when developing SI in the USA almost 50 years ago was to enhance new students' study strategies to increase student learning and performance, as well as retention (Arendale, 2002). However, in Europe, the main goals associated with SI-PASS are often qualitative (Malm et al., 2021). One example of a typical European goal for SI-PASS is to aid the transition to higher education and to enhance the student experience and engagement. In Europe there are various other names for SI-PASS. For instance, Peer Assisted Learning (PAL) and specific local names like CÉIM, which is an Irish name for the programme run at National University of Ireland (NUI) Galway.

One of the main opportunities that arose during the pandemic was the chance to see how SI-PASS worked in an online environment. Before the pandemic, running online SI-programmes was globally quite rare and relatively little was known about its potential. Some general findings were that:

- online SI-PASS allows for more flexibility in scheduling sessions (Beaumont et al., 2012)
- online SI-PASS requires more time to process course material (Hizer et al., 2017)
- student attendance is lower in online SI-PASS (Nikolic & Nicholls, 2017; Woolrych, et al., 2018; Devine & Jolly, 2016)
- online SI-PASS is less social (Beaumont et al., 2012) as relationships are harder to build
- platform management leads to the demands on the student leader being higher in online SI-PASS (Watts et al., 2015)
- online SI-PASS appears to have a similar effectiveness as in-person campus SI-PASS when it comes to improving student performance (Finlay & Mitchell, 2017; Woolrych et al., 2018).

However, in order to understand the full potential of online SI-PASS more information about experiences, good practices and expected outcomes are needed.

One aim of this paper is to contribute towards this goal. Other questions for consideration in this paper on SI-PASS in the unprecedented, challenging pandemic times were:

- How did SI-PASS programmes adjust? What were the main challenges?
- How important was SI-PASS for the universities?
- Did the objectives of having SI-PASS change as a result of the pandemic?
- How did SI-PASS contribute to student engagement during the pandemic?
- What learning have we taken from running SI-PASS programmes in pandemic times?

Method

In order to answer the questions formulated in the introduction, we used a case study methodology, which means to study one or several cases within their context. Case studies were considered from four countries (one from each country) where SI-PASS is most common in Europe: the UK, Sweden, Ireland and Norway. The SI-PASS programmes were all well-established at each institution. In all four case studies, various methods were used to extract information on the HEIs' SI-PASS programmes during the pandemic. The methods used were the same at all four HEIs and can be summarized as:

- Quantitative information on attendance was obtained from participation records at SI-PASS sessions;
- Evaluation surveys with SI-PASS attendees and leaders;
- Information from planning and debrief meetings for leaders and staff, session observations by supervisors and SI-PASS mentors, and leader reflective reports;
- Conversations (oral and e-mail) and semi-structured interviews with academic staff and local SI-PASS supervisors.

Although the methods were the same, the details sometimes varied. For instance, each HEI had their own survey and interview questions as well as their own way of conducting planning and debrief meetings. However, as the aim was to obtain the overall picture of SI-PASS programmes in pandemic times (from March 2020 to June 2021), these minor differences most likely had little impact on the outcomes. In order to harmonise the presentation of the obtained data, four subheadings were used in each case study: Context; Organisation/Practice; Outcomes/The experience; and Learning/Future influence.

Case Study: The CÉIM Peer Learning Programme at the National University of Ireland Galway

Context

The National University of Ireland Galway (NUI Galway) is a research-led university located in the west of Ireland with over 19,000 students (University website - https://www.nuigalway.ie). Based on the SI-PASS model, the CÉIM peer learning programme at the university was initiated by NUI Galway Students' Union in 2013 and is run as a partnership between students, academic staff and the Students' Union. The programme is referred to simply as 'CÉIM', which means 'step' or 'degree' in the Irish language. The central day-to-day running of the programme is managed by a team of three staff based at the Students' Union. Approximately 2,000 1st year students studying Law, Engineering, Science and Arts are currently offered CÉIM and the programme has around 150 student leaders. Attendance is optional but is encouraged. All students are automatically assigned to a CÉIM-group and those choosing to attend meet for hour-long sessions on a weekly basis throughout the entire academic year. Attendance is monitored very carefully using a digital attendance system. Quality of engagement is monitored via observations and feedback from leaders at weekly debrief meetings.

Organisation/Practice

Prior to the pandemic, the CÉIM peer learning programme was exclusively delivered in person. It was decided that CÉIM would pivot to online delivery based on predicted public health advice for the coming year and in order to provide clarity for 1st year students and support high engagement in the programme. Zoom was chosen as the most suitable platform for delivery. Significant changes were made to the NUI Galway student IT portal to support online delivery of CÉIM, as was the case with processes, documentation and how resources were shared with student leaders.

As it could be challenging for students to make meaningful connections and form friendships with classmates in the online environment, it was decided for the first time that all 1st year students would be assigned to a small group of about 5-6 students called a Buddy/Study group within their CÉIM-group. Breakout rooms in many CÉIM-sessions were then formed using these Buddy/Study groups. Students were able to email their Buddy/Study group members and were encouraged to meet up online, get to know each other, have lecture watch parties and form a study group to support each other.

Instead of two consecutive days of in-person leader training, training was delivered via six short workshops on Zoom and the inclusion of a new 2-hour e-learning module. New training topics included enhanced use of digital technology (e.g., Zoom, Padlet, MentiMeter, Microsoft Office) and how to manage online breakout rooms successfully. Weekly debrief meetings with leaders, the CÉIM Students'

Union team and academic staff took place online with student leaders continuing to chair these and take minutes. All 38 peer learning leader groups were observed at least once at the start of each semester by either the CÉIM-team or an experienced former CÉIM-leader. Conducting observations on Zoom allowed observers to move efficiently between multiple groups; however, it was challenging at times to observe breakout rooms meaningfully as students often stopped interacting when a staff member joined the group.

CÉIM online sessions were largely timetabled as they would have been if they were taking place on campus. Students who could not attend live sessions were supported by getting access to learning resources developed in sessions. Marketing of peer learning sessions and leader recruitment continued to be carried out via the Virtual Learning environment (VLE), lecture announcements from academic staff, leaders discussing the benefits of being a leader in sessions and customised emails to students. Furthermore, increased use was made of social media – particularly Instagram and Twitter.

The central CÉIM-team ran informal online Q&A sessions for prospective new leaders regarding what was involved in becoming a leader (leaders are volunteers and are not paid). Leader recruitment interviews were conducted in groups on Zoom by academic staff and members of the CÉIM-team in order to assess students' suitability. Conducting the interviews online required additional advance briefing of applicants via email and also the creation of online interview etiquette guidelines. The online interview process proved to be very successful.

Outcomes/The experience

In 2020/21, 83% of students offered CÉIM participated in the programme, and in Semester 1 just over 50% of all students offered CÉIM attended 4 or more sessions out of 9/10 sessions. This was quite a substantial increase in participation in comparison to 2019/20 on-campus sessions, which had 68% attendance and 33% of all students offered CÉIM attended 4 or more sessions out of 9/10 sessions in Semester 1. The high attendance levels can most likely be attributed to the fact that the vast majority of teaching and learning was online all year and strict lockdown restrictions were in place. Students were essentially a captive audience and they had very few other opportunities to get to know and interact informally with peers outside of CÉIM.

The biggest difficulty for the programme in 2020/21 was encouraging student engagement and interaction. Many student leaders found it extremely challenging when the 1st year students did not turn on their cameras, speak into their microphones or participate in breakout rooms. From a programme management perspective, online delivery removed the need to locate and book suitable venues and running debrief meetings was more efficient as staff did not need to move between multiple geographically distant venues. Leader absenteeism due to

illness was reduced as leaders with mild infections generally continued to lead sessions online, whereas they would not have been able to in an in-person setting. By removing travel time and the need to attend in person, online delivery opened up peer learning sessions to student groups who previously may have struggled to attend, for example those with a long commute or caring responsibilities. The main focus of the CÉIM-programme has always been to provide academic peer support, but in 2020/21, at the request of the 1st year students, the focus moved more to social interaction, facilitating discussions about adapting to online learning, and health and wellbeing.

952 responses were received from 1st year students to a short online survey at the end of semester 1. 77% of respondents agreed that CÉIM had helped them feel a part of the university community and 87% agreed that CÉIM supported them to understand course content. 1st year students particularly appreciated the opportunity to meet people through CÉIM, as well as the support with assignments and the efforts made by leaders to help them. Many also found it to be a welcoming and inclusive learning environment. A 1st year student stated that CÉIM was *'One of the few chances to speak with other members of the class and see how they are finding it'.*

Through conversations with university management and academic staff, it was clear that CÉIM was perceived as being more important than ever before to the 1st year experience. In national media, NUI Galway Director of the Centre for Excellence in Learning and Teaching Dr Iain MacLabhrainn said when talking about learning during the pandemic: *"One of the success stories, which has helped considerably with student wellbeing, sense of belonging, and academic success, has been our peer-assisted learning scheme, CÉIM"* (McGuire, 2021).

Learning/Future influence

It was encouraging to see how well the CÉIM-model adapted to online delivery, while recognising that the high attendance levels are unlikely to be achieved online again once the majority of teaching and learning returns to in-person delivery. Based on survey data, focus group responses and feedback from leaders, for the large majority of 1st year students that CÉIM works with, in-person delivery is preferred, and engagement comes much more naturally in the on-campus setting. However, the benefits of online peer learning cannot be underestimated for certain cohorts of students. As CÉIM moves back to in-person delivery, there is an enhanced focus on how to meaningfully include students who are unable to attend in-person peer learning sessions.

The experience of running peer learning online has encouraged the CÉIM-team to re-evaluate their perception of student engagement in online settings. Students who do not have their cameras and microphones on can still be highly engaged via group chat, Padlet boards etc. However, the role of student leaders differs

somewhat in these situations, with leaders needing to take on an expanded leadership role. Delivering CÉIM online required staff and leaders to think even more about accessibility and inclusion, which prompted the CÉIM-team to complete training in Universal Design for Learning (UDL) and also deliver short workshops on UDL for all leaders. This enhanced focus on inclusion continued once in-person sessions resumed and has led to greater variety in peer learning session activities and greater awareness of digital accessibility tools.

The experience of delivering peer learning online has reinforced for the CÉIM-team the need to have simple processes and set clear expectations for 1st year students and leaders. Online collaborative tools such as Padlet, Mentimeter and Jamboard have continued to be utilised more widely since in-person sessions resumed because they are anonymous, low cost and reduce the need for shared physical materials. The pandemic helped shine a spotlight on CÉIM peer learning and demonstrate to students, leaders, academic staff and university management the vital role peer learning plays in helping students develop a sense of belonging, build social connections and deepen learning.

Case Study: The SI-programme at Nord University, Norway

Context

Nord University has 11,000 students and 1,300 employees distributed across five faculties, situated at nine study locations in central and northern Norway (University website - https://www.nord.no/no). Supplemental Instruction (SI) has been utilised as a method to support student learning since the formation of the university in 2016. Before the pandemic broke out, SI was offered on six course modules at the Faculty of Nursing and Health Sciences and in the Business School. On average, 12 SI-sessions were held each week, offered to ~400 students, with about 15 participating students at each session. In order to support the sessions, 20-30 SI-leaders are trained each year through a cooperation between SI-supervisors at different campuses and study programmes. In March 2020, all Norwegian Universities were forced to cancel classes on campus and introduce online teaching, due to the COVID-19 outbreak. However, after a two-week break, SI was again offered to students at the Nord University campuses throughout the spring semester.

Organisation/Practice

In order to determine how to run SI during the pandemic, there was a continuous dialogue between SI-supervisors, a student representative and the Head of Division. Nord University eventually decided to run SI-sessions on campus, based on two considerations:

1. Academically, the students needed a place to physically meet, discuss and collaborate on their studies in general, and in challenging courses in particular.
2. Socially, the University and the students considered SI to be an important social arena, a function that became even more important during the pandemic.

When new guidelines for Nord University were presented in January 2021, they stated that all educational and assessment activities should run online. However, the University made specific guidelines for student-led activities, including SI, stating that on-campus meetings were allowed with an upper participant limit of 20 students.

In 2021, Nord University received extraordinary grants from the Ministry of Education and Research to strengthen students' welfare and learning. The extra funds were earmarked for engaging students in peer learning and supporting social activities amongst students. Part of these grants were provided to support physical SI-PASS during the pandemic. Figure 1 summarizes the online and on-campus operation of selected main teaching strategies during the pandemic period. On-campus SI-sessions ran throughout the period. Furthermore, SI was introduced in two new courses during the pandemic, expanding the SI offering to students.

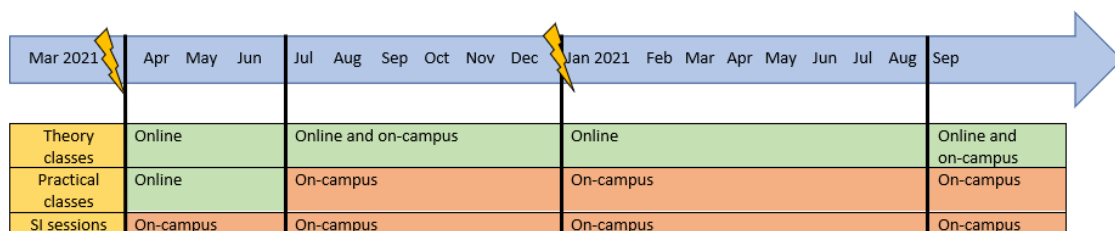|	Mar 2021	Apr May Jun	Jul Aug Sep Oct Nov Dec	Jan 2021 Feb Mar Apr May Jun Jul Aug	Sep
Theory classes		Online	Online and on-campus	Online	Online and on-campus
Practical classes		Online	On-campus	On-campus	On-campus
SI sessions		On-campus	On-campus	On-campus	On-campus

Figure 1. On-campus or online operation of selected teaching activities during the Covid-19 pandemic at Nord University. Lightning symbols illustrate time periods where teaching activities were considered especially challenging, due to the increase in positive Covid-19 cases in the district.

Most of the SI-program administration was carried out in accordance with normal, pre-pandemic conditions at Nord University, and has been described elsewhere (Helde et al., 2021; Sletvold et al., 2021). Two SI-leader training sessions were run on-campus in autumn 2020 (one was initially held online but moved to campus from the second day due to trouble with the internet connection). Observation of SI-sessions was also done in-person, however, to a smaller extent than in pre-pandemic times, as academic staff were requested, or periodically required, to work from home. Nevertheless, SI-leaders were provided ongoing support through frequent online contact with the supervisors. The recruitment of SI-leaders was carried out online, and promotion and recruitment pitches were delivered

during lectures. The pitch, presented by SI-supervisors or course lecturers, included general information about SI-PASS and the need for SI-leaders. The leaders are also paid for their work.

Outcomes/The experience
Overall, Nord University experienced providing on-campus SI-sessions as positive for both students, SI-leaders, and academic staff. The most prominent benefit was social with students being able to engage with each other in person. The possibility of active learning in a safe environment was also appreciated. Since most other learning activities were online, the need for a place to meet and discuss course material was heightened during the pandemic.

"*My impression was that in those challenging times it became important to continue with SI, due to the students learning. (…) I believe it was important for them.*" *(Employee, Nord University).*

Furthermore, as a positive side effect, when students had a place to meet and discuss, the workload on academic staff seemed to be reduced in some cases.

"*I think it* [SI-sessions] *reduced the burden on university employees, that the students got the chance to ask each other questions and get help there, instead of sending emails.*" *(Employee, Nord University).*

Student participation in SI during the pandemic varied. At the Faculty of Nursing and Health Sciences, the attendance at SI-sessions increased from 2019 to 2020, from seven to 18 students per SI-session, respectively. However, in 2020, six fewer sessions were held, compared to 2019. In contrast, the SI attendance was lower than usual at the Business School (the number of SI-sessions was the same as pre-pandemic). An explanation could be that many of the students at Business School left their student accommodation and returned to their hometowns during the pandemic. The students at the Faculty of Nursing and Health Sciences, however, typically stayed at campus due to practical skills training. Student engagement in sessions at both faculties was monitored through the collaborative activities used by the SI-leaders to process challenging course material. The SI-leaders worked more independently through the pandemic and took more responsibility than usual for administration of the SI-programme. There were not many challenges with on-campus SI during the pandemic. The uncertainty whether SI could remain at campus was a mental strain for participants, leaders and staff. According to the SI-supervisors, SI-leaders were forced to divide students into several smaller groups, possibly introducing extra workload. However, two SI-leaders are typically in charge of each session, making it possible to split larger student groups between them.

The pandemic showed the need to meet in-person in challenging times and emphasized that SI has an important role both academically and socially. Feedback from the students' union emphasized the important role of SI for the students, as well as a great satisfaction and gratitude for arranging it on-campus in the pandemic period. This was made possible through close dialogue at all levels (including with the Ministry of Education and Research), which hopefully will continue in post-pandemic times. In the future, on-campus SI will continue to be prioritized, as the social aspect of it became even more apparent during the pandemic. At the same time, Nord University has a well-established digital infrastructure and is willing to use it. Thus, there is the possibility of implementing online SI, for instance, for students studying part-time. In summary, the pandemic has provided confidence for continuing the implementation of SI at several faculties at Nord University.

Case Study: The PASS-programme at the University of Manchester, UK

Context

The University of Manchester is the largest single-site, research focused university in the UK with just over 40,000 students (University website - https://www.manchester.ac.uk). The University welcomes over 10,000 new 1st year Undergraduates each year, with approximately half of those being supported by weekly timetabled SI-PASS. These students are assigned to PASS-groups and their attendance is optional but encouraged and tracked within sessions. SI-PASS came to the University of Manchester in 1995, where it was piloted in Chemistry and known as PASS (Peer Assisted Study Sessions). Since then, PASS has grown to support over 30 disciplines, with over 800 PASS-leaders recruited annually.

Pre-pandemic, the University operated an on campus face-to-face delivery of PASS, with most PASS-leader training being delivered in person, supplemented with asynchronous material. PASS at Manchester has always been academically focussed, and coordinated by a small central strategic team, in partnership with more operational Student and Staff (Academic and Administrative) Coordinators at a discipline level.

Organisation/Practice

In order to adjust PASS-schemes to an online environment during the pandemic, the relationship between the central team and local Student and Staff Coordinators at a discipline level changed and developed, as partnership was even more important. The central team encouraged and empowered the local coordinators to make scheme adaptations and was a constant sounding board resource in the

process. By March 2020, much of the PASS-leader recruitment had already been completed for 2020-21; some had started their face-to-face training; however, the majority had not. There was thus a need to pivot quickly to deliver an online leader training programme. This was made up of three units: two delivered asynchronously and one synchronously using Zoom. An additional element of training content was included to boost confidence and support the new PASS-leaders to find and try new approaches and learning technologies. Online PASS-sessions continued to be timetabled where feasible, but with PASS-leaders managing Zoom links and rooms. Little needed to change for recruiting the 2021-22 leaders as the recruitment process was done at a discipline level using current leaders, emails and online lecture shout-outs. The only difference pre-pandemic was that this would have been face-to-face.

Throughout the year, leaders were supported through weekly online debriefs delivered by student Coordinators and supported by Staff from both the Discipline and Central level. Leaders at Manchester are not paid, and instead are offered a series of exclusive development opportunities, and reward initiatives as recognition of their contributions. This continued through the pandemic, and at the end of the Academic year, all staff and students involved in PASS were invited to an online awards and celebration event. As part of the development package for leaders, and part of the quality assurance process, all leaders are observed in role, and provided with feedback. During the pandemic year, a PASS-leader self-observation process was implemented for the first time instead of the usual observation process. Leaders were encouraged to self-reflect on their practice, and to submit elements of this through an online form. Reflections were collated and themes of good practice and areas of development were cascaded via leader debriefs. This was an effective way of encouraging leaders to self-observe and set development goals, but also to gain some evaluation data from PASS-leaders directly (student engagement was monitored by leaders through the collaborative activities in sessions). With over 800 leaders, the previous in-person PASS observation model with staff observing every session, was logistically inefficient and time consuming, whereas this approach was student-led. In PASS-schemes where attendance and engagement were low, leader self-reflections were also supplemented with more traditional staff observations, ensuring quality assurance was still maintained.

Outcomes/Experience

All disciplines that offer PASS still ran during the pandemic, but no new schemes were initiated. Average PASS attendance was broadly maintained at the same levels as previous academic years (for instance, the average range of PASS attendance at the university was 15-71% in 2019/20 and 12-73% in 2020/21). However, schemes that are well supported and well embedded in the discipline tended to thrive during the pandemic more than newer or less embedded schemes. The general challenges were the organisational logistics:

timetabling; allocation of groups; setting up zoom links; scheme administration. The experience of having PASS in pandemic times will be illustrated using two discipline case studies - Aerospace Engineering and Computer Science. These two have been chosen as best practice models and provide good examples of the benefits of well-embedded and supported schemes, who embraced effective partnership between Staff and Student Coordinators.

PASS in Aerospace Engineering

PASS in Aerospace Engineering moved online during the pandemic using Zoom and added an additional motive - to build a strong sense of community within the course broadly, and across year groups, outside of PASS. Leaders volunteered more of their time to support not only their students academically, but also to provide them with the opportunity to interact with other 1st and 2nd years. Attendance at Aerospace Engineering PASS was consistent with previous years. The average Semester 1 attendance for both the academic year 19/20 and 20/21 was 72%. However, the broader impact on the wellbeing and cohesion within the cohort is believed to have increased, as PASS-participants survey responses often focussed on these areas instead of academic topics. One typical example of a quote in pandemic times to illustrate this: *"PASS has been vital this year for me. I find it's been the only way to easily interact with people on my course."* More emphasis was put on building a sense of community within the team of leaders in debriefs and this had a knock-on effect to how leaders approached their PASS-sessions. Academic colleagues gave greater feedback on how impressed they were with the leaders than in previous years. Academic coordinators and the Central coordination team noted that leaders were innovative, and that they maximised online learning technologies such as Kahoot, Mentimeter and Jamboards. Some leaders went as far as mailing snacks to their attendees' homes to boost motivation and engagement. As a consequence, leaders reported in debriefs that students seemed more willing to attend sessions, ask questions and make mistakes. PASS was highlighted by academic colleagues as being a rare opportunity for students, from the same course, to learn and share together.

PASS in Computer Science

Computer Science PASS also moved online using Discord for sessions, supplemented with additional chat channels to facilitate conversations around academic and social matters. Interacting in this way really challenged the year group boundaries and contributed to bringing a sense of community to the cohort. This had a positive effect on PASS attendance as students were connected on Discord for much longer than one hour of PASS per week. The average attendance in Semester 1 increased from 29% in the academic year 19/20 to 48% in the academic year 20/21.

PASS-sessions on Discord were often less structured than in person PASS. The groups were more fluid, with attendees being able to move in and out of different

PASS-groups more easily, depending on the topic occurring in that channel. This had a positive effect on engagement as attendees were able to make their sessions more tailored to their needs. It was felt that Discord as a platform, acted as the 'hook in' for the attendees, because discussions were constant, and not just occurring in the one hour of timetabled PASS. A challenge for Computer Science PASS was that because engagement was high and flexibility to choose a PASS-group, there was a tendency for leaders to not plan sessions as much, which made sessions more informal with less of an academic focus. This was driven by the attendees due to the unprecedented times but there will be a need to support the return to more structured sessions in the future.

Learning/Future Outcomes

These two case studies highlight the success of working in partnership with Co-ordination teams at a discipline level. The new approach to running PASS created better relationships between year groups and built new communities at a discipline level, something that hadn't always been seen previously. A typical comment to illustrate this:

"PASS is giving us a great opportunity to socialise and get familiar with the community at the University" (PASS-participant, Aerospace Engineering)

The richer platform developed for Computer Science PASS provided many more opportunities for students to interact and build a sense of community. Discord will continue to be used in 2021/22, supplemented with in person PASS-sessions. Aerospace Engineering PASS will continue to prioritise the broader benefits which focuses on both the academic element but also course cohesion and support.

The University of Manchester will continue to deliver aspects of online synchronous PASS-leader training because of its flexibility and will include greater emphasis on inclusivity and building connections as part of the training. Observations will be PASS-leader led (rather than staff-led), and the new self-reflection and peer observations will be embedded. The coordination of PASS will continue to be delivered in partnership, with increased autonomy given to Student Coordinators to shape the delivery of the PASS-scheme in their discipline. The University of Manchester has been reminded of the power of peer learning, and how increasing academic performance is key. However, building student confidence, through partnership, in an HE environment is equally as important.

Case study: The SI-programme at Lund University, Sweden

Context

Lund University is one of the largest universities in Scandinavia with ~44,000 students and more than 8,000 employees. It was founded in 1666 and covers disciplines within Engineering, Science, Law, Social Sciences, Medicine, Humanities, Theology, Economics and Management, and Fine and Performing Arts (University website - https://lu.se). Supplemental Instruction (SI) was introduced in courses within Science and Engineering at Lund University in 1994. Due to positive feedback, SI subsequently spread and successfully evolved at the University. During the 2019/2020 academic year (before the pandemic), SI involved about 40 trained supervisors within the University staff and at least 235 SI-leaders among the students. SI-sessions were attached to 160 course modules, providing support to at least 4,200 students within various disciplines (Malm, et al., 2020)

Organisation/Practice

The way that SI was viewed during the pandemic varied between faculties and sometimes even at a subject level. At one end, SI was seen as a resource encouraging students to work together and to help each other out. At the other end, SI was viewed as something that did not need to be prioritized in these extraordinary times. All education at the University went online in mid-March 2020 and continued online until the end of the semester (mid-June). All courses bar a few (less than 10) continued to provide SI as a supplement during the pandemic. In September 2020 (start of the academic year), restrictions had eased to allow for some face-to-face teaching. Some courses then held SI on campus even in courses where other activities stayed online, making the SI-sessions the only scheduled opportunity for students to meet with each other in person. Extra funding was supplied to meet health guidelines, and this provided for more sessions with smaller groups, individual whiteboard pens, hand sanitizers and face masks. In November (2020), the pandemic situation worsened, requiring all teaching activities to go back online, including SI. Teaching activities and SI-sessions remained online for the rest of the academic year.

The training for new SI-leaders was extended and modified to focus more on issues related to the online environment. An online learning platform intended for SI-activities went from having a minor role to playing a greater part in several areas; as a source of distributing information to SI-leaders (instructions and guidance on how to use Zoom and digital tools), for communication (among and between SI-leaders and supervisors), and for documenting and archiving (such as attendance and reflective reports). Support for SI-leaders was modified to fit online conditions. Debrief meetings for leaders were sometimes split into smaller groups to provide a better atmosphere for discussions and support engagement in activities. More attention was given to the leaders' reflective reports and written feedback as possibilities for in-person sessions became limited. Supervisors/SI-

mentors carried out session observations and feedback to leaders at a similar frequency as before the pandemic (about two times per semester). However, they generally found the observations harder to do as many students did not have cameras on, and the use of breakout rooms made it difficult to obtain a good overview of sessions.

The recruitment of new SI-leaders followed the usual process during the pandemic, involving general or directed announcements, as well as recommendations from former SI-leaders, academic staff and study directors. The SI-Leaders are also paid for their work. The selection of leaders was generally based upon written applications, interviews, and students' academic performance. The number of applications were about the same as before the pandemic or slightly less. The formal marketing of SI was similar to non-pandemic times, except for being online in online courses. SI was introduced at the start of the course, usually by the SI-leaders, sometimes together with the teacher. All SI-sessions were optional and scheduled together with regular teaching activities. In the case of online sessions, the Zoom link was published instead of the classroom. If attendance was low, students were reminded and encouraged to join SI through extra announcements and/or emails from the SI-leaders. However, the word-of-mouth promotion from student-to-student or staff-to-student appears to have been reduced considerably in the digital environment.

Outcomes/The experience

Attendance at SI-sessions was generally lower during the pandemic than in pre-pandemic times – both in online and face-to-face sessions. For instance, at one faculty with a large SI-programme, the average percentage of students attending went from 83% in 2019/20 to 70% in 2020/21. The reduced participation in online sessions could partly be explained by Zoom fatigue as online courses often had full schedules. Thus, supplementary sessions like SI tended to be the first to be skipped. In campus SI-sessions, logistical matters hindered the students from attending. Limited study places on campus (due to social distancing guidelines) forced many students to study at home. Students then skipped SI to avoid the extra travel (as pointed out by several leaders), especially when regular online teaching activities were scheduled before or after SI-sessions on campus.

The objectives of having SI remained the same during the pandemic, namely enhancing the experience and study environment for new students and encouraging them to take responsibility for their own learning. The faculty education boards generally considered SI as having an important role in integrating new students into the University study environment. The academic staff in supported courses, on the other hand, had a more varied view of SI in pandemic times. Most were very supportive of SI, but some not as much. This may be explained by the rather taxing situation for the teachers themselves to adapt to going online and that

some wished to have extra resources to support that (i.e., to transfer financial resources from SI to their teaching).

The SI-leaders generally coped well delivering online SI-sessions with 91% of 68 leaders who responded to a survey indicating they were satisfied with their sessions. Furthermore, many supervisors expressed amazement at the leaders' adaptability and creativity in solving challenging situations. However, the majority of leaders found it more challenging to work in the online environment than in face-to-face sessions as it was harder to gauge the attending students´ engagement (normally monitored through the participation in small-group discussions and cooperative work). This can be illustrated by a quote from one of the leaders:

"What is good face-to-face is that you can walk around the room, see how things are going and help when it's needed. This is much harder to do online. A big minus of having SI on Zoom is that not a lot of students turn on their cameras, so it feels like you're speaking to yourself."

Students participating in SI during the pandemic generally had a positive experience, as evidenced by a survey where 95% of 376 SI-attendee respondents said they were satisfied with the SI-sessions. The survey also showed that a majority of responding students believed that participation in SI led to a deeper understanding of course material and improved performance in the supported course, as well as helping develop general skills such as problem solving, teamwork, and critical thinking. Furthermore, most respondents believed that SI at least partly improved their academic confidence, their way of studying and network of study partners. A thematic analysis of 312 responses to an open survey question on the best aspects of SI-sessions revealed that attendees appreciated the interaction with other students the most (68% brought this up). This is illustrated by a participant quote below:

"That there is a scheduled time for all of us in the course to meet up and discuss different questions and help each other. This would probably not happen otherwise. Also, nice to meet up in person during these times..."
Learning/Future influence

There were three main learning outcomes from running SI during a pandemic at Lund University. One is about how to deliver online SI. There were a few courses delivering online SI before the pandemic, but little was actually known about how to conduct SI in an online environment. The extensive knowledge and support system built up during the pandemic should help immensely if deciding to run SI in an online course or as a supplement to a campus course. A second learning outcome is that online SI is attractive for students that normally would not have the ability to attend SI, for instance students partly on parental leave or with other occupations. Furthermore, SI-leaders have noticed that some students find it easier to become active in an online environment, since they perceive a

stronger/safer sense of being anonymous. A third learning outcome is that SI-sessions in an online or socially distanced face-to-face environment are more of a challenge when it comes to student engagement. The student leaders usually need a more thorough session plan to overcome this. Overall, however, the appreciation of academic discussions in a relaxed atmosphere for SI-participants appears to be similar to non-pandemic times based on surveys.

Conclusions

How did SI-PASS programmes adjust during the pandemic?

Most practice in the SI-PASS programmes (session delivery, leader recruitment, training, observations and leader support) had to pivot online with just one HEI in this paper (Nord) able to continue with face-to-face sessions. In all case studies there was greater leader independence, ownership and responsibility. Leader support was adapted and, in some cases, for example in Manchester, new practice (self-reflection) was introduced. In general, the work for supervisors, after the initial efforts of adapting the administration to online conditions, appears to partly have been simplified. For instance, in most cases, the flexibility in scheduling of SI-PASS sessions increased, as pointed out in pre-pandemic studies of online SI-PASS. Also, there was no need for room bookings and observations and interviews of SI-PASS leaders, as well as debrief meetings, became logistically simpler.

What were the main challenges during the pandemic?

The greatest challenge for the SI-PASS programmes was the need for different strategies to support student engagement during sessions. Furthermore, engagement appears to be harder to monitor in online sessions (i.e., if students are active in collaborative work). Another challenge is that the complexity of the SI-PASS leader task increased. Besides the normal duties of an SI-PASS leader, they had to manage the online meeting platform and plan different ways of creating student engagement and collaboration opportunities using the meeting platform features as well as additional software. Leaders generally rose to the challenge and thrived, adapting sessions and being very creative in their delivery by adopting different facilitator pedagogy and the use of technology.

How important was SI-PASS for the universities? Did the objectives of having SI-PASS change as a result of the pandemic?

The HEIs´ awareness of the important role that SI-PASS plays academically for students was largely heightened. Perhaps even more important was that all HEIs also saw SI-PASS as an excellent opportunity to support students socially. SI-

PASS programmes responded to that by developing this aspect further and emphasizing the objective of creating social connections/belonging. For instance, the Buddy/Study group system in Galway and the richer Discord platform developed for Computer Science PASS in Manchester that provided many more opportunities for students to interact and build a sense of community. Outside of SI-PASS there were very few, if any, opportunities for students at the four HEIs to get to know each other, interact informally with peers and develop a sense of belonging/community.

How did SI-PASS contribute to student engagement during the pandemic?

SI-PASS provided an opportunity to engage both with the course material and fellow students in a time of isolation. This seems to have been much appreciated by attending students in all case studies. Especially, with regard to being able to socialize academically that would probably not have happened otherwise.

What learning have we taken from running SI-PASS programmes in pandemic times?

As pointed out in the introduction, previous literature suggests that attendance is lower in online SI-PASS. Here, however, a couple of SI-PASS schemes stood out by increasing attendance - the online CÉIM-programme at NUI Galway and the PASS-programme at Computer Science in Manchester. The main success factors appear to be the Buddy/Study groups formed within their SI-PASS group in the case of NUI Galway. And the use of more tailored PASS-sessions together with Discord as a platform, allowing for discussions beyond the sessions, in the case of Computer Science in Manchester. These findings can likely be used by other HEIs running online SI-PASS programmes.

Other learning outcomes from running SI-PASS programmes in pandemic times were that the mostly successful adaptations appear to have been a result of established partnerships with different stakeholders making it easier to problem solve in challenging times. Furthermore, the SI-PASS leaders need more training and preparation time in order to be successful running sessions online as the extra dimension of managing a platform plus additional tools for collaborative learning (like jamboard, padlet, Mentimeter, etc.) is added. This might partly be solved by having an extra leader at sessions. The added knowledge about how online tools can stimulate student engagement may be used in face-to-face sessions in the future. The change in delivery and the need to use different methods for collaborative learning (e.g., Chat function, Padlets, OneDrive documents etc.), challenged the traditional perception of student engagement, recognising forms of engagement beyond verbal discussion. Additionally, the consideration for inclusion and accessibility has been heightened.

A limitation of this paper, however, is that it draws from just four HEIs with well-established and resourced SI-PASS programmes and therefore may not reflect the experience of less established programmes.

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