



Lessons Learned from a Blended-Learning Based Supplemental Instruction (SI) Support System at a Rural-Based University in South Africa

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Abstract. Universities in South Africa are continuously striving to heighten excellence in teaching and learning (T&L) practices. Additionally, Covid-19 epidemic catapulted heavy reliance on online T&L, and this created significant space for Blended Learning (BL). It therefore behoves students to receive support to ensure increased throughput rate¹. The Supplemental Instruction Programme (SIP) is one of the student support programmes offered at various universities, both locally and internationally. Using BL spaces to enhance engagement and collaboration among Supplemental Instruction Leaders (SILs) and SI students (SISs); academics; and students has unique challenges and successes. This paper investigated lessons learned from the BL space as support system of the SIP at a rural-based university in South Africa. The study adopted a qualitative research approach following the explorative case study design. Data were collected through an open-ended questionnaire administered with 10 SILs and 10 SISs, and semi-structured interviews conducted with two of both 10 SILs and 10 SISs. Thematic analysis was used for both sets of data. The analysis of the responses indicates the following: for SILs, they primarily have a good understanding and appreciation of BL, with preference for the virtual platform aspect given its convenience in terms of venue scouting and accommodating shy students. SILs claimed they learned being proactive, time management skills and managing diversity. While on the other hand, the SIS, they showed (a) an understanding of BL and how it was used in the SI sessions, (b) that the physical contact provides an opportunity to access resources while the virtual platform encourages collaboration; and (c) that BL developed their personal skills such as self-confidence and ability to engage.

Keywords: Lessons, SI Programme, Blended Learning Space, Challenge, Success Stories

1 Introduction

Universities in South Africa are continuously aim at encouraging excellent academic practices. Additionally, Covid-19 epidemic served as a catalyst to promote heavy reliance on online teaching and learning (T&L), and this became a fertile ground for

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Blended Learning (BL). It therefore behoves students to receive support to ensure increased throughput rate [1]. Blended Learning (BL) refers to “learning systems [that thoughtfully] combine face-to-face instruction with computer-mediated [and online] learning [2]. In addition, Shamsuddin and Kaur [3] define Blended Learning as “an approach in education system that provides multi delivery mode to optimise learning outcome and cost of program delivery in institutions.”

The advent of Covid-19 has revolutionized the education delivery method. Teaching and learning practices are now delivered through BL to ensure a smooth transition from traditional teaching to a combined approach; BL approach has since been adopted. Even student support programmes such as SI deliver their services in a blended manner. Students are now exposed to Blended Learning. It is vital to know the students’ perspective regarding BL based SI session and their view matters in the improvement and development of the SI Programme. What are the students’ lessons learnt while using BL based SI approach?



Fig. 1. Lessons Learned <https://www.prince2.com/zar/blog/4-lessons-to-be-learnt-from-top-businesses-netflix-and-kraft-heinz> [4]



Fig. 2. Blended Learning <https://letslearnenglish.com/benefits-of-blended-learning/> [5]

Literature argues that online learning can never substitute contact learning because human touch is essential for effective learning [6][7]. Thus, the SI Leaders (SILs) attend classes (virtual and/or contact) to effectively conduct both online and contact SI sessions. This article presents lessons learnt from the BL based SI at a rural-based university in South Africa. This study hopes to contribute to the knowledge of Blended Learning support in institutions of higher learning.

2 Literature Review

The importance of student engagement in influencing achievement and learning in higher education setting is acknowledged [8]. “Blended Learning, in particular, helps students increase their interactions, communication skills, self-confidence, self-awareness, as well as encourage discussion and collaboration not only with their lecturers but also with their peer classmates and course materials, thus leading to an overall positive experience” [8].

In a similar vein, Lozada and Johnson [9] assert that SI in nature fosters a transformative learning experience for the students rather than transactional. Blended Learning is assumed to improve the students’ learning experiences in HE [10]. Students are faced with the likelihood of experiencing elements of independence and being autonomous in their learning, and the opportunity of working at their own pace [11][12].

BL is assumed to be effective in preparing students to be active learners and active thinkers through diverse learning approaches such as (a) A vigorous peer communication. SI Leaders (SILs) interacting and engaging with student during SI sessions; (b) Information processing during SI sessions; and (c) Taking students from the known to the unknown. Through SI intervention, students are likely to perform well if (a) support is provided, (b) they are engaged and (c) they are provided assessment with constructive feedback [8]. Kim¹³ posits that students likes Blended Learning because online learning permits them to acquire and imbibe knowledge repetitively and face-to-face allows them to review the course content. Subsequently, it is fundamental to be meticulous when designing the Blended Learning support to foster a good social interaction and nurture effective learning environment Boelens, De Wever and Voet [14].

Challenges of BL based Supplemental Instruction

The challenges posed by BL based SI on student learning are, but not limited to: (a) Technology problems for students; b) Unrealistic students’ expectations; (c) Inadequate training for staff and student (technological); d) Difficulty in acquiring teaching and technology skills; (e) Lack of support from academics; and f) Time commitment [15].

Benefits of BL based Supplemental Instruction (SI)

Blended Learning appears to be effective in this 21st Century than when one mode is adopted, either online or face-to-face. Smith and Hill [16] attest that the effectiveness of this approach (i.e., BL) is indicated in students’ academic performance. The benefits of BL based SI included that it, amongst others (a) Encourages flexibility; (b) Fosters student engagement; (c) Promotes bonding between lecturers and students; and (d) Advances self-spaced learning.

3 Theoretical Framework

Supplemental Instruction is by its nature eclectic. “SI draws upon a suite of learning theories which can be described as developmental” [17]. Despite the reality of its long presence in the field of teaching and learning, consensus among academics on Blended Learning’s definition remains elusive [18][19]. Given the above, there is no one theory underpinning this study, save the explorative case study design with the intention of augmenting SI aligned theories (Self-Determination Theory (SDT); Zone of Proximal Development Theory (ZPD); Constructivism; Transformational theory etc.). As such, the use explorative case study design in this instance is “on furthering the understanding the researcher[s] [have] about a general phenomenon or condition [of BL based SI]” [20].

4 The Case and Methodology

The study adopted a qualitative research approach following the explorative case study design. Data were collected through an open-ended questionnaire administered with 10 SILs and 10 SISs, and semi-structured interviews conducted with two of both 10 SILs and 10 SISs. Both the SI Leaders and the SI students were given a google form questionnaire as a research data collection tool. Furthermore, two SILs and two SI students were interviewed to source out in-depth information based on the topic under research. There was equal balance in terms of both males and females being represented ranging from the age of 19 to 27 years. Thematic analysis was used for both sets of data.

In a 2019 paper entitled “What Do We Mean by Blended Learning?”, the author, Stefan Hrastinski provides information on two classical definitions of the concept Blended Learning that can be merged thus: “Blended learning systems [thoughtfully] combine face-to-face instruction [and learning] with computer-mediated [and online] learning.” [2]. Based on the definition of Blended Learning given above, please respond to the questions below according to your role and personal experience.

Questions for SI Leaders:

1. In your view, how do you think Blended Learning was used in your SI experience?
2. What are the personal lessons learned through conducting Blended SI Sessions?
3. Give your personal highlight of the challenges encountered using Blended Learning for SI and state how you have overcome them.
4. In your own thoughts or from your own experiences, state/share the success stories achieved during the Blended SI sessions you have conducted.

Questions for SI Students:

1. In your own understanding, how do you think Blended Learning was used in your SI experience?
2. What personal experiences have you learned that came out of the support system of SI sessions using Blended Learning?
3. How did the Blended SI learning sessions improve your academic performance?

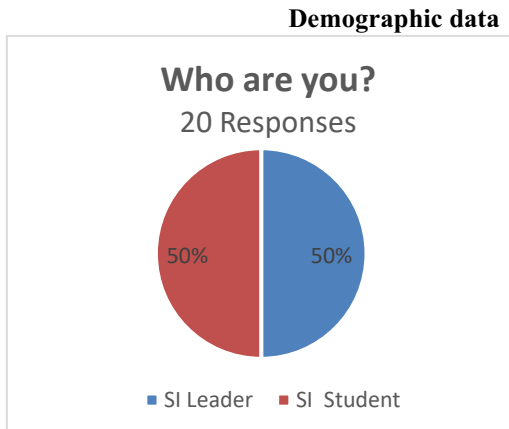


Fig. 3. Participants' Status

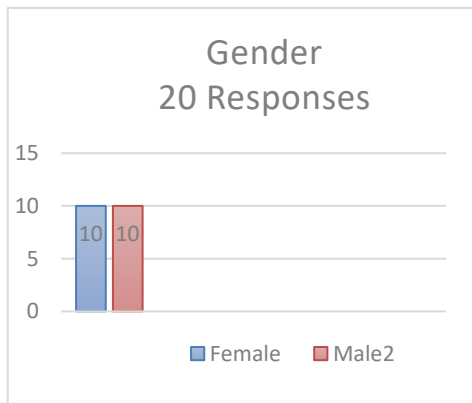


Fig. 4. Participants' Gender

Age:

20 responses

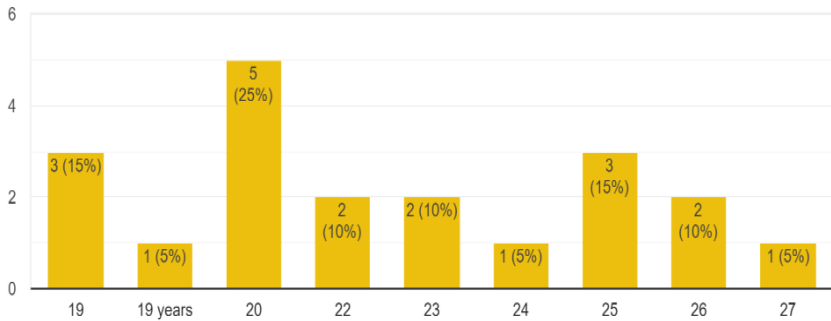


Fig. 5. Participants' Age

5 Findings from the questionnaire and Discussion

5.1 BL Based SI Experiences: by SI Leaders

The data depicted below are the responses from the SI Leaders as they have provided their perceptions regarding the BL based SI sessions. Moreover, these responses provide clear and succinct evidence to further enhance the quality of services rendered in the SI programme.

BL was used effectively

The participants outlined their BL based SI experiences as being effective given the concomitant freedom to choose the platforms based on the availability of resources. This assertion is supported by sentiments expressed in reviewed literature [11-13]. Such sentiments were expressed as follows:

Participant 1: *“Blended Learning made things easier for me because it's flexible, students can choose how they want us to have a session whether online or in contact. Others preferred (one) while others preferred both. Students enjoy it when they have the freedom to choose how their sessions should be, also it's accommodative to those away from school.”*

Participant 5: *“During the SI sessions Blended Learning was used whereby we conduct SI sessions venue based or face to face and also with online platforms such as Google meet and Microsoft office.”*

Lack of students’ participation in both approaches

As the unsurpassed value of physical human interaction is espoused by literature [6][7], the participants echoed much preference for contact sessions given that there was comparatively lack of students’ participation in online settings. That preference is summarized by one of the participants thus:

Participant 4: *“It was used efficiently more especially when students and SI Leader cannot find slot for contact but doesn't work as good as contact. Both ways work perfectly. The problem with online learning is that students are not interacting as contact.”*

However, the participants postulated that online platforms were effective as students failed to engage and interact during the contact sessions. This supports one of Smith and Hill’s [16] claims, namely, that BL based SI fosters collaboration. The following can summarize such postulations:

Participant 7: *“It helps especially for some of us who cannot do contact classes but want to be SI Leaders, having a session online is the option because you don't need to waste a lot of time looking for the venue and students can also participate because some are very shy during contact session.”*

BL displayed an imbalance

The participants asserted that there was no balance between the online and contact platforms.

Participant 10: *“There was no balance, the physical or contact part of the Blended Learning was well covered but due to the university lacking resources or seminars specially for SI sessions it was difficult to engage the online thing. Had there been resources to help the online part it was going to be covered.”*

5.2 Lessons Learnt by SI Leaders

Diversity Management

The following participants indicated the importance of diversity management and that students prefer different learning methods as literature asserts [15]

Participant 1: *“Students are different, some prefer meeting in contact while others are shy to speak in public so it's great to accommodate everyone.”*

Participant 2: *“I learned to be extra patience with everyone. At the beginning I thought I understand diversity in all the levels but these sessions improved it.”*

Participant 4: *“Is to be patient and accommodate everyone. Students tend to be different there are students who come to class to observe whereas some come unprepared. So patience is highly required and open a platform for those who understand to teach others is always working great.”*

Being Proactive

The participants highlighted the need to be proactive as a leader.

Participant 7: *“I learned that one needs to be prepared and also you don't have to always be perfect, make mistakes and learn from them.”*

Time Management

The participants indicated the importance of managing time and a way of leading by example.

Participant 8: *“Personal lessons I learnt was being early in at least 30mins to the venue, because sometimes students get lost. So, it will be easy for me to give them direction when I'm already at the venue.”*

5.3 Challenges and Ways to Overcome Them: by SI Leaders

Inability to reach consensus on whether online or contact sessions

The participants indicated the challenge of students battling to choose the platforms and they resolved the issue in different ways.

Participant 1: *“When deciding whether to have a session online or in contact it is difficult because students have different preferences and it's hard to accommodate everyone's needs. In a case where there's an argument with regard to session venue, I would put a voting poll and let democracy decides although I had to have another session if I had a session in contact to accommodate those who are not around.”*

Participant 9: *“Some students preferred online sessions while others preferred contact sessions. This required me to have two sessions tackling the same chapter, however, I did overcome this by encouraging them to attend an online session first then after that we would have a contact session to revise what we did online.”*

Time management

The participants stressed the issue of time management as prompted by students being late to contact sessions.

Participant 10: *“The challenge with face-to-face is time management since with face-to-face students have to move to the venue so it was late coming. I dealt with it by giving them dummy time which was 30 minutes before the actual start of the lesson.”*

Lack of support from the lecturers

The participants emphasised the treatment they have received from lecturers.

Participant 5: *“Firstly, the lecturer did not want understand why we are doing the sessions, he later told me that I have to quit since I am not benefiting, it takes my time and I am not getting paid, that’s where I told I am fortifying CV not everything is about money, that was because of been volunteering as an SI leader.”*

Poor student participation and attendance.

The participants highlighted the issue of poor participation and attendance of students as stressful.

Participant 4: *“Participation Students at first those I was going to teach whereas they listen, so I made sure that I give them questions and ask them to answer and explain how they came up with the solutions whereas I act like I don’t know, this resulted in them arguing with their different answers, so I always tell them to back-up their statements while listening to the other ones’ solutions to check if their answers are correct. In that manner they become more confident and start to be active. Attendance: Students attend more online than contact I always encourage them to attend more especially contact cos they get to meet each other and engage.”*

Participant 2: *“At the beginning of the sessions students’ participation was very poor. Most of them thought that I’m there to give them answers to their questions although I have mentioned that I will be assisting them. As time goes on, I was able to help them see the need for discussing and understanding the concepts. Before the session, I would pick one student who was attending the previous session to share with everyone what they understood and I would also pick someone who didn’t attend just to find out what is it that she or he knew about that concept. I made sure that everyone participates, if for that day you don’t understand the concept and wish to learn from others, your job as the student will be to project the questions for the day. If I notice that others are not participating, I would call out their names*

and they will start participating. I also shared videos(cartoons) before the session just to ease their mind and prepare them for the class. Sometimes I would ask them to share their university experiences just to laugh before the sessions. After doing all this, my sessions started to be fruitful.”

Venue as a barrier

The participants stressed out the challenge of securing a venue to hold contact sessions.

Participant 6: *“As for me I haven't conducted online, so with the face-to-face sessions the issue is the venues and materials to use, because the module I'm dealing with it requires you to do hands on. So I'm using the department materials and labs to conduct the sessions.”*

5.4 Successes of BL based SI Sessions: by SI Leaders

Students performing well academically

True to what Smith and Hill (2019) [16] say about the positive impact of BL based SI on student performance, the participants indicated the improvement of their students academically after the intervention of SI thus:

Participant 2: *“Most of my students passed with flying colours and what makes me extra happy is that now they understand the concept of module, Microbiology and some want to major with the module as I am speaking.”*

Participant 5: *“In first semester my SI students passed the module I was assisting, and they did very well were most obtained distinctions and told me that SI helped, and they will also apply to be one of the Leaders.”*

Participants 7: *“Students yield good mark with their tests and when we interact during our sessions.”*

The effectiveness of both online and contact SI sessions

The participants highlighted the effectiveness of BL based SI sessions.

Participants 1: *“Every student's preference were met because I could have both online and contact sessions, no one was left behind.”*

Participant 3: *“Learners like attending the sessions in the evening online since the gave classes throughout the afternoon.”*

Participant 4: *“I conducted this session last semester (contact) then I introduced a topic then one student took over and explained all content they I provided questions then those who understood him faster were helping those who didn't understand. I gave them another question they all got it right.”*

Participant 9: *“I managed to have many sessions with students. I would have an online session with them to discuss this certain chapter and later we have a contact session to revise what we discussed. This helped most of my students to do very well.”*

Participant 10: *“The success story was that with face-to-face I got to know the students, and for them to actually see how I conduct the sessions and the content knowledge in me they started having believe that they can actually do it.”*

The students’ understanding of the content

The participants commented on their own understanding of BL based SI session content thus:

Participant 4: *“I conducted this session last semester (contact) then I introduced a topic then one student took over and explained all content they I provided questions then those who understood him faster were helping those who didn't understand. I gave them another question they all got it right. Last year during online classes I also introduced a topic then they all took over and engaged posing questions to each other.”*

Participant 8: *“The strategy that I'm using is, each and every time after facilitating I give my students a mini quiz to do so that i can see where they are still struggling.”*

5.5 The SI Students’ Experiences

The following responses are from the students who attended the BL based SI sessions to enhance their academic performance and improve their learning skills and abilities.

Students demonstrated diverse understanding

SI students appreciated how BL based SI facilitated their comprehension.

Participant 2: *“It is a new experience, but I would confidently say that it's effective.”*

Participant 3: *“From the perspective of face-to-face, as SI student I was being provided with exercise from the lecture guide and previous question papers to solve and discuss how had I reached to the answer. And virtually the SI leader was providing some of the points to consider, and also was giving the scope of what we will be doing in next SI session.”*

Participant 4: *“When it comes to the Blended Learning group of students moves in groups through set of online learning activities in the classroom with guidance of teacher or SI leader. In other words, teachers or lectures led instruction and student engage in the task online.”*

Participant 8: *“Blended Learning was used in SI experience to create a dynamic and engaging learning environment that combines online and in-person learning. This allowed students to benefit from the flexibility and convenience of online learning, while still being able to interact with their peers and instructors in person. It also provided access to a wider range of resources, materials, and allowed for more personal-*

ized instruction. The Blended Learning approach also helped to foster a sense of community and collaboration among students, while still allowing for individualized learning.”

Participant 10: *“It’s a way to give students access to more resources and flexibility in their learning, while still providing the benefits of face-to-face instruction.”*

Understanding the content and collaboration

SI students acknowledged BL based SI for promoting their understanding on content and appreciation of collaboration. That sentiment is captured in the following:

Participant 3: *“Gaining knowledge from our SI leaders who are willing to help sacrificed their time for us to have an easy journey as first years.”*

Participant 4: *“I was able to engage not only in classes but get a helping hand beyond being in class by the mentors and lecturers.”*

Participant 8: *“One of the personal experiences learned through the support system of SI sessions using Blended Learning is the importance of collaboration and teamwork. Through the online and in-person components of the sessions, students were able to work together to solve problems, share ideas, and learn from each other’s experiences.”*

Approachable SI Leaders

SI students highlighted the significance of approachability on the part of SI Leaders as follows.

Participant 1: *“The leader was so flexible to the extent that I talked to her with everything that was troubling me and she was there to guide me!”*

(Acquired new skills

SI students mentioned the benefit of acquiring new skills through BL based SI. Such was stated as follows:

Participant 6: *“I had developed a self-confidence to stand in front of mass of people, also my vocabulary has improved a lot. And working as a group is the effective way of learning and helping one another.”*

Participant 10: *“It gave more flexibility to learn at my own pace. I can go back and review material if I need to or move on more quickly if i understand the concepts. It also provided more individualized instruction, since we as students can get help and feedback from our own SI leader/ teacher online or in person. Another benefit is that it helped us to develop more skills it can make learning more fun and engaging, since we can use technology to explore topics in new and creative ways.”*

Exposure to new method of teaching

SI students noted being exposed to novel ways of teaching through BL based SI.

Participant 2: *“That we do not have to necessarily depend on manual learning since education is blended.”*

Participant 6: *“I learned that the Blended Learning allows learners of all abilities the opportunity to advance their studies at the rate that works for them, without prejudice and mistreatment.”*

Participant 7: *“How to use other platforms for studying.”*

Improvement on academic performance BL SI session: by SI students.

SI students mentioned the benefit of acquiring new skills through BL based SI [8]. A set of remarkable acquired skills can be seen in following expressions:

Participant 1: *“The sessions helped me understand the content in more depth.”*

Participant 2: *“I have improved remarkably with regards to the issues I have had over the module, big things are coming, thanks SI's Blended Learning.”*

Participant 3: *“I was able to gain so much knowledge through the SI leaders than I gained it by myself. It helped me so much to prepare for my tests and exams.”*

Participant 4: *“It has helped me a lot especially because if I had missed something or didn't fully a concept in a lecture then the online class with mentors would make it easier for me to understand.”*

Participant 5: *“Academically I had exponentially improved from a moderate achiever to exceptional scores.”*

Participant 6: *“The Blended Learning improved and motivated my performance. Made me feel freely in participating and interacting with other people, boosted my self-esteem, self-learning and team-work.”*

Participant 9: *“I started performing so well after all the sessions we had, I even can take my time to do research to improve my level of understanding.”*

6 Findings from Interviews and Discussion

Two (2) of the SI Leaders and two (2) of the SI students were interviewed by the researchers to get insightful information about BL based SI sessions. Both the SI Leaders and the students displayed an understanding and appreciation of the Blended Learning approached based SI sessions provided by the SI Leaders to the SI students. In line with literature [2], participants argued that Blended Learning is an approach that focuses on both contact and online settings. However, the participants were exposed to challenges such as (a) erratic network and insufficient data, which was addressed by scheduling sessions that are not clashing with the load shedding schedule; and (b) poor attendance of students, which was addressed through providing motivation to the students. The foregoing does illustrate the importance of ensuring healthy and stable internet access for effective BL based SI. In addition, SI Leaders should be skilled on human motivation so that as to frequently encourage attendance through inspiration.

On success stories, SI Leaders presented that (a) students were enabled to perform well academically; (b) BL based SI fostered session participation thus, student engagement; and (c) there is an opportunity to promote a deeper understanding of the module to the core, which becomes a win-win situation. The SI students attested that the BL based SI sessions have improved their academic performance, and enhanced interaction skill. All this is in line with literature assertions [16]. With regard to lessons learnt from participating in SI based BL sessions as the SI Leader, mentioning was made of acquired self-confidence and general improvement in public speaking, facilitation and time management skills as a leader. Whereas participation as a student ensured the gaining of socialising skills as students claimed to have been able to effortlessly interact with fellow students. This supports what claims by other researchers [8].

7 Conclusion and Recommendations

Blended Learning is a relatively new and much relevant approach to deliver education in the institutions of higher learning. Although the study acknowledges the challenges posed by BL, students still prefer the BL based SI approach as they are fascinated by, and appreciative of the advancement of technology. Based on the findings on this study, the prime benefit derived by student leaders employing blended learning approach during their SI sessions is flexibility. In sum, the BL based SI has since captured the interest of most of the students and student assistants, and both are willing to learn more about the advancement of technology to enhance their academic performance. Students do appreciate the intervention of the BL based SI programme as it helps to improve their academic performance. From the anecdotal evidence given, it would seem Supplemental Instruction programme offered through Blended Learning improves student engagement during sessions and uplifts their self-confidence and awareness.

Congruent with the SI Leaders and students' perceptions on lessons learned from the BL based SI sessions, it is clear that:

- Staff and students require training on the usage of BL;
- Faculty should conduct diagnostic assessment prior teaching commences; and
- There should be constant motivation for students and staff.

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