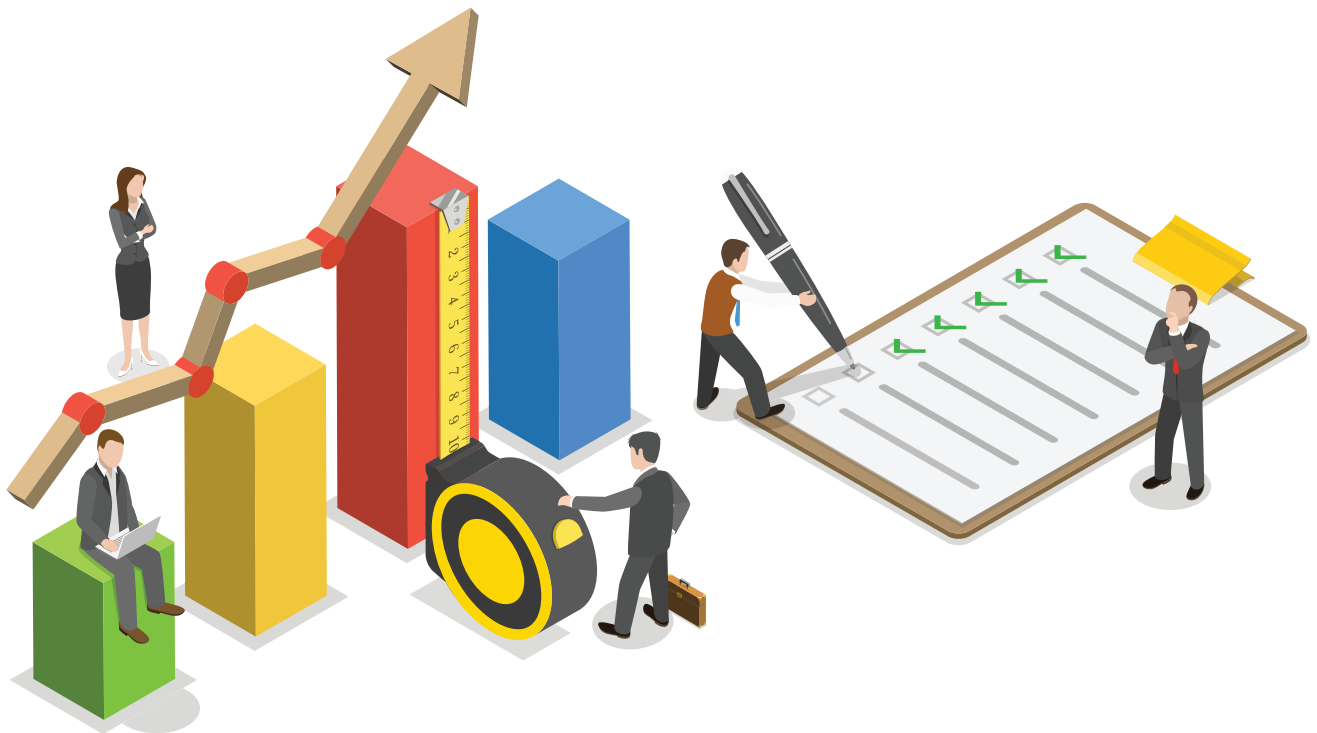# BENCHMARKING EDUCATIONAL DEVELOPMENT CENTRES IN SINGAPORE'S UNIVERSITIES

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This article presents reflections from an explorative benchmarking analysis of Educational Development Centres (EDCs) in the public universities of Singapore. A primary motive to undertake this project was to understand if SUTD's educational development centre, Learning Sciences Lab (LSL), is on the right trajectory in its educational development work in comparison with the wider community.

To set up LSL, we used a multi-pronged approach to understand the needs of the stakeholders at SUTD. This included conducting several interviews, focus group discussions and surveys with various stakeholders such as key leaders, faculty, staff members and students. We then took the strengths and weakness of our SUTD context and our priorities into consideration in designing the educational development activities to align with the needs of the stakeholders as well as the vision and mission of the university. The blueprint of educational development at SUTD was shared in the earlier newsletters (Sockalingam, 2017 & 2018).

Since it has been two years since the starting up, we felt that it will be imperative to take an outward looking approach as well, to understand the scope of educational development work nationally and internationally, to benchmark and learn from. So we started with a basic set of questions on what educational development means, what sort of activities do educational development centres like LSL in the universities from Singapore typically conduct, and infer implications of SUTD's context in shaping our future educational development programs and initiatives at SUTD.

HISTORICAL CONTEXT OF EDUCATIONAL DEVELOPMENT CENTRES

The field of educational development and introduction of educational development centres to conduct educational development work in universities is relatively young in comparison to the history of universities. While there are universities which have had EDCs for over 40 years (Gosling, 2009; Gibbs. 2013), there are still others which are yet to establish EDCs. The first EDC in Singapore was established in the National University of Singapore.

Fernandez and Márquez (2017) posit that the rationale for setting up EDCs seems to be context specific to each country and region. In many instances, national level policies seem to have led to the setting up of EDCs in universities. For instance, the 1997 Dearing report on the status of higher education is thought to have energized educational development work in UK. Quality Assurance agencies have played a key role in the establishment of EDCs in Europe, Australia and Spain (Di Napoli et.al., 2010). As a result, many of these countries have made it compulsory for all faculty members to undergo pedagogical training and hence universities have set up their EDCs (Trowler & Bamber, 2005; Lindberg-Sand & Sonesson, 2008).

Fink (2013) reports a geo-specific progression of EDCs and remarks that Asian countries typically tend to be at the basic level of educational development work where there is little or no activity. A rare systematic review of faculty development in Asia by Phuong, Duong, and McLean (2015) suggests that faculty development in Asia is more predominant in English-speaking Asian countries such as Vietnam, Singapore and Malaysia.

Overall, educational development work seems to be fairly young in Asia when compared to the United States, European countries and Australia.

DATA COLLECTION AND ANALYSIS

To classify educational development work, international educational development literature was referred to (Sockalingam, 2018). To compare universities across Singapore, we used publicly available official data from the web portals of the six public universities in Singapore, namely (1) Nanyang Technological University (NTU), (2) National University of Singapore (NUS), (3) Singapore Institute of Technology (SIT), (4) Singapore Management University (SMU), (5) Singapore University of Social Sciences (SUSS), and (6) Singapore University of Technology and Design (SUTD), accessed in August 2018.

In addition, we conducted an online survey with the various EDCs during the period of July to August 2018. The survey consisted of a mix of multiple choice questions and open-ended questions, and queried on (1) the various activities of the centre, (2) with ranking of the top 3 activities, (3) indication of compulsory activities, (4) identification of primary stakeholders that they serve (students/faculty/staff), (5) identification of three support centres they collaborate with, (6) participation level in centre activities, (7) if and how the EDCs measures the impact of educational development work, (8) challenges faced, and (9) future directions. Institutional Review Board (IRB) clearance was obtained on the research protocol. Mixed method analysis was used to analyse and summarise the data.

RESULTS

I. Classification of Educational Development Work

According to the international Professional and Organizational Development Network (POD Network, 2018), educational development refers to developmental work undertaken in areas of teaching and learning towards the enhancement of education. It can be classified as (1) Instructor (Faculty/Graduate Student/ Postdoc) Development, (2) Instructional Development, and (3) Organizational Development. Chalmers, and O'Brien, (2004) clarify that educational development is concerned with the development of both teaching and the environment in which teaching occurs. Leibowitz (2014) introduces the people factor and adds that educational development, sometimes referred to as academic development, focuses on academics, their learning and achievements (Leibowitz, 2014).

Felten, Kalish, Pingree, and Plank (2007) suggest including a fourth dimension of Community Development to this. Since there is an increasing inclusion of students in educational development work, Student Development could also be added to this list. Combining these is the proposal for a classification of educational development as depicted in Table 1 (Sockalingam, 2018).

While the five types of developmental work focus on different aspects of teaching and learning, all of these are essentially about supporting faculty in teaching so that it eventually helps students to learn better. Chalmers and O'Brien (2004) argue that the role and ultimate responsibility of an educational development centre is to work with university teachers and staff members on their educational development, so that by developing themselves, their students benefit. The focus is on learners and learning (as reflected in our LSL logo).

II. Educational Context and EDCs in Singapore

To start with the educational context, we collated an overview of statistics (Table 2) from the centralized educational development centres in the six universities. This was to compare apples to apples. LSL is a centralized unit, common to all pillars and clusters in SUTD. In large universities such as NUS, there are satellite centres such as those in the medical schools. However, this study does not include the satellite centres.

One of the survey questions listed out 18 common educational development activities practiced internationally and asked EDCs to indicate activities their centres engaged in and to rank the top three. Of these 18, 8 were on Instructor Development, 4 on Community Development, 2 on Organizational Development, 2 on Instruction Development, and 2 on Student Development. All of the six EDCs indicated that they were engaged in 4 to 5 types of the five educational development activities.

The most highly ranked category was Instructor Development, and this was followed by Organization and Community Development. Instruction and Student Development was the least commonly cited and ranked. In general, the nature of

educational development work seems to depend on the type of university. For instance, a university focusing on adult learners catered to Student Development whilst most others did not.

The six EDCs, known by different names, (Table 2), consist of two main groups of staff/faculty members. They are the educational developers and administrators. This study considers educational developers to be members who are functionally engaged in educational development work (Table 1) regardless of their official employment status as staff or faculty members. The other group, administrators, are primarily involved in administrative support and functioning of the unit, such as in organizing events. The size of EDCs in Singapore typically range from 2 to 18 members. In general, most of the educational developers were faculty members who may be seconded to the EDCs. Since Instructor Development is a key function of EDCs, Table 2 focused on the number of educational developer to instructor ratio. Instructors in our case can be in the form of full time faculty, associate faculty and graduate instructors. The ratio was very varied across the universities, and further research is needed in this area.

Unlike UK or European countries, there is no requirement for higher educational faculty members to have completed teacher training in Singapore. Each university has its own ways of ensuring the quality of faculty members. So the EDCs were queried if their programs and services are mandatory and the extent of participation in EDC activities. Interestingly, only one of the activities related to Instructor Development was made compulsory in five of the six EDCS. This was the orientation courses for new faculty and graduate teaching assistants. Also, one other university has made it compulsory for all faculty to be prepared for online teaching. None of the other activities are compulsory in all the six universities. One of the six universities indicated that none of the activities are compulsory.

The six EDCs noted that participation in activities is varied and typically highest for compulsory activities. Participation in most other activities can range from low to medium, and depends on various factors such as time and interests, with some EDCs noting that they would like to have more participation. Typically, teaching track faculty members were reported to be more participative than research/tenure track members in EDC activities.

The EDCs were asked to indicate three of their close collaborators. Of these, Educational Technology and Library were commonly cited to be close partners by all six. In fact, three of the six EDCs were once formed in partnership with Educational Technology units, and there is often an overlap in activities. Others collaborators include Teaching Academy, Office of Students Admissions, Research Centres, Office of Graduate Studies, Office of Advancement and Development, and Academic Facilities.

All EDCs indicated that they used end-of-activity surveys to measure participant satisfaction and collate feedback on EDC activities. Focus groups, anecdotal evidences, and open-ended feedback are used as additional measures. About 50% of the EDCs indicated having a systematic or longitudinal evaluation of specific and key activities or programs such as the Graduate Teaching Assistant training program. However, all indicated that they did not have an established holistic measurement on the impact of EDC work on teaching and learning at the university level.

When asked on the challenges faced in EDC work, all had noted changing or influencing the mind set of key stakeholders (which includes leadership, management, faculty, graduate and undergraduate students) towards educational development work. This could take the form of gaining acceptance on the importance of EDC work and educational developers as credible support agents from faculty members, being able to show the

Type of Educational Development Work	Focuses on	Examples of activities
Instructor Development	Teaching practices of individual instructors such as faculty members, graduate teaching assistants or postdoctorates - to prepare and develop the instructors in teaching.	✓ Pedagogical workshops ✓ Peer-coaching ✓ Scholarship of Teaching and Learning
Instructional Development	Course and curriculum – This is concerned with the development of programs, courses, course materials, pedagogical approach and assessment practices.	✓ Curriculum mapping and revamping ✓ Supporting instructional development of digital material course preparation
Organizational Development	Strategizing, developing policies and systems to support teaching and learning in higher education as an organization.	✓ Setting up systems and processes on faculty educational development ✓ Strategizing and shaping teaching and learning related policies
Student Development	Helping students on learning to learn and including them in educational development work	✓ Workshops on learning to learn skills, research skills, team work ✓ Students as partners
Community Development	Helping to build teaching and learning communities, facilitating learning and providing support.	✓ Holding sharing sessions such as lunchtime Brown Bag sessions ✓ Social media network ✓ Writing circles

Table 1: Classification of Educational Development (Sockalingam, 2018)

University	University Origin / EDC Origin	UG Students in 2018	Instructor (Full time, Part time, Graduate)	Size	EDC Members – Educational Developer	EDC Members – Administrative Staff	Educational Developer to Instructor Ratio	EDC
National University of Singapore (NUS) http://www.nus.edu.sg	1905	28000	~4000 (Exclude Graduate Instructor)	Large (>10000 students)	18		1:444	Centre for the Development of Teaching and Learning (CDTL) http://www.cdtl.nus.edu.sg
	1996				9	9		
Nanyang Technological University of Singapore (NTU) https://www.ntu.edu.sg	1991	24300	1726 (Exclude Graduate Instructor)	Large	9		1:345	Teaching, Learning and Pedagogy Division (TLPD) https://www.ntu.edu.sg/tlpd/Pages/default.aspx
	2014				5	4		
Singapore Management University (SMU) https://www.smu.edu.sg	2000	8000	574 (Include Graduate Instructor)	Medium (>5000, <10000 students)	10.5		1:68	Centre for Teaching Excellence (CTE) https://cte.smu.edu.sg
	2005				8.5	2		
Singapore University of Technology and Design (SUTD) https://www.sutd.edu.sg	2009	1300	~400 (Include Graduate Instructor)	Small (<5000 students)	2		1:400	Learning Sciences Lab (LSL) https://www.sutd.edu.sg/learningsciences
	2016				1	1		
Singapore Institute of Technology (SIT) https://www.singaporetech.edu.sg	2009	6100	216	Medium	6		1:43	Centre for Learning Environment and assessment Development (CoLEAD) (Only internal website - no public facing website)
	2014				5	1		
Singapore University of Social Sciences (SUSS) https://www.suss.edu.sg	2017	14000	1000	Large	9		1:200	The Teaching and Learning Centre (TLC) tlc.suss.edu.sg/
	2017				5	4		

Table 2: Overview of statistics from the six universities in Singapore and their EDCs

impact of EDC work, getting sufficient resources to support and sustain EDC activities, being able to grow the programs, increasing participation and balancing between generic and discipline-specific educational development programs. Another challenge noted was the lack of academic development expertise and the practice of contractual or secondment of educational developers in EDCs leading to disruptions and non-continuity.

GENERAL DISCUSSION

Overall, the results suggest that despite a brief history of less than 30 years, the EDCs in the six universities in Singapore have made significant progress in providing a wide range of activities and a holistic educational development support for their faculty, staff members, undergraduates and graduate students. We can call it "holistic" because the range of activities cover all or most of the 5 types of educational development activities.

Like most universities worldwide, the primary focus of EDCs in Singapore seems to be Instructor Development. Activities of Organizational, Community, Instruction and Student Development are yet to become more prevalent and this can be for varied reasons, which are yet to be explored in Singapore context.

> " Unlike UK or European countries, there is no requirement for higher educational faculty members to have completed teacher training in Singapore. "

Despite the variety, participation level in these activities are reportedly low except for mandatory programs/services. Therefore, these EDCs and universities need to consider how to engage more faculty and other stakeholders in educational development, and this may be related to recognition and rewards for teaching and participation in educational development activities, as well as university level policies that emphasise the need for continual development in teaching in higher education.

Unlike UK or European countries, there is no national level policies in Singapore that require faculty members at higher educational institutions to complete teacher training. Such national level policies are noted as the reasons for existence and functions of EDCs in other studies (Kolomitro & Anstey, 2016).

A possible implication of low participation level and participation by only a sub-group of faculty members is that participation and feedback is often related to resources and support for the EDCs. So low participation could lead to lack of resource support in terms of manpower and funding. For instance, the analysis shows that the size of EDCs can be very small, with 1 educational developer serving over 400 instructors. This could lead to overstretched efforts by EDCs.

The lack of manpower in EDCs could also explain the lack of focus on certain areas of educational development such as in the areas of student development despite the possibility that this can prove to be very useful and essential for the various stakeholders of a university. So, it is worth looking into policies and schemes to recognise and reward participation in continual professional development in teaching to increase participation as well as consider the resource needs of EDCs in terms of manpower and funding.

A common challenge faced by Directors of EDCs across the universities seem to be influencing the mindset of stakeholders towards educational development. Such observations are also noted by others such as Kinash and Wood (2010), Gosling and Turner (2015) and Knapper (2016). Despite the recognition by institutions that EDCs are necessary, it is often observed that EDCs are only loosely coupled or leveraged upon for institutional strategic directions on teaching and learning (Gosling and Turner, 2015). Perhaps more could be done to involve and engage EDCs in various aspects of strategizing university policies and initiatives in aspects other than instructor development. Rather than just EDCs making it as their directions to engage the various departments, the various departments could also see how to engage EDCs.

The benchmarking survey also reveals that EDCs can do more to determine and establish the impact of EDCS on teaching and learning. Many of the EDCs in this study report that they do end of activity satisfaction survey or conduct focus groups on the EDC activities to measure impact. This would be a good start but may not shed light on longitudinal impact. For instance, if an EDC organizes a talk, it would be good to find out if and how faculty members continue to use some of the learnings in their teaching in the first place. While we do not expect every participant to find the session useful and relevant for them to implement in their work, it is good to find out if attendance has been translated to continuation or if it has an impact in some ways in the larger context.

Another point to note is that even though educational development activities are meant to enhance students' learning experiences and lead to gain in learning, this is an indirect effect. The direct impact is likely to be on teaching first and through teaching on learning. This is because our primary focus tends to be on teachers and teaching. So we may need to consider the nature of educational development activities and the expected outcomes and outputs to measure the impact rather than expecting to see an immediate impact on learning (this may be very small, compounded and take time). Overall, there is a need to build appropriate measurement tools.

RELATING THE FINDINGS TO SUTD, LSL

Having gotten a broader picture, we wanted to see how SUTD stands in comparison to this common set of data. Comparing the range of LSL activities to the proposed educational development framework reveals that LSL conducts activities in all five areas of educational development work. Table 3 provides an overview of the services provided by LSL.

We know from our LSL data that 82 % of teaching track, 37.5% of tenure track faculty and 94% of Graduate teaching assistants engage with LSL in various ways (LSL, 2018). This seems to be a fairly healthy number given that the LSL team consists of one educational developer and an administrator (before September 2019). This is a ratio of 1 or 2 staff to 200 faculty members, 200 Graduate Teaching Assistants and 1350 undergraduate students. Moving forward, it would be good to determine the extent of engagement. It can be rationalised that the quality of the engagement is likely to depend on ratio of staff to faculty, instructors and stakeholders.

To address resource limitations, LSL uses creative ways that are aligned with the SUTD context. For instance, LSL introduces and advocates Scholarship of Teaching and Learning (SOTL) as the key mechanism for continual professional development in teaching at SUTD. SOTL can be likened to design thinking in teaching. SOTL places responsibility on the faculty members to understand student needs, design suitable teaching activities, reflect and inquire on their teaching practices. While the onus is on faculty members, they can leverage on LSL and colleagues to support inquiry into teaching through collaboration and consultations. LSL creates opportunities for faculty and the wider community to share and learn on pedagogical practices. The advantages of this approach are that this ensures quality teaching, continual development in teaching and also effective and efficient use of resources.

Another innovative strategy that LSL has initiated is an Educational Fellowship Program in collaboration with the Academy of Higher Education (AHE) to build the leadership capability of senior and experienced faculty members in teaching. The Educational Fellowship Program, launched this year (2019), involves a pioneering batch of 11 faculty members undertaking a reflective journey of their teaching practices (Figure 1). The faculty members will submit their portfolio for peer recognition and validation by the international community based on AHE's framework on teaching and learning in higher education. This program will lead to international professional recognition in teaching. In addition, the critical differentiating factor of the SUTD program is that the first batch of fellows will be the champions in mentoring the next batch of participants. This way, there is continual and community-based learning and reflective teaching.

In general, instead of using top-down, policy driven approaches to "mandate" training, LSL attempts to a build up a ground up approach of developing a teaching culture at SUTD. This, we feel, is likely to be more impactful and sustainable. Also, the focus moves from teaching, that is how to teach, to learning, that is how do I know that my students are learning if I teach in a certain way.

Area of Educational Development	Examples of Current LSL activities
Instructor Development	✓ Teaching Certificate Program for Graduate Teaching Assistants ✓ New faculty workshop on "Teaching at SUTD" ✓ Faculty workshops such as "Teaching Methods for Active Learning" ✓ Peer coaching on teaching ✓ Consultations and collaborations on educational projects
Instructional Development	✓ Consultations on chunking curriculum for Flipped learning, blended learning ✓ Formative/summative assessments such as rubrics
Organizational Development	✓ Forming Faculty Educational Developing Committee and consulting on key initiatives ✓ Strategizing and implementing Educational Fellowship Program ✓ Systematic studies on benchmarking educational development centres/evaluating teaching course implementation
Student Development	✓ Engaging "Students as Partners" in creating teaching materials ✓ Including students in educational talks/sessions ✓ Organising "Learning to Learn" workshops for students
Community Development	✓ Sharing sessions on teaching and learning ✓ Annual Pedagogy Day ✓ Annual Pedagogy Newsletter ✓ Quarterly communications ✓ Website/Blogsites/Online Resources

Table 3: Educational Development at SUTD

Figure 1. First Cohort of AHE fellows

LSL works with various offices, pillars and clusters which offer diverse academic programs in pedagogical initiatives. For instance, there is increasing number of self-initiated pedagogical interest groups at pillar/cluster levels over the 3 years. LSL plays a role in co-organizing, keeping track of the overall initiatives at the university level, and connecting the various stakeholders on key projects. One example is the compilation of all the various pedagogical publications from SUTD. Another is strategizing and publishing this thematic annual pedagogical newsletter. In this way, LSL serves as a coordination and connecting point for pedagogical initiatives, and shifts educational development from individual to community-based.

LSL also works with faculty members and students to co-create teaching materials and educational resources and this sort of mutual contributions lead to shared learnings on pedagogy. For instance, LSL works with faculty members in framing their work on pedagogical theory and literature and introduces them to new aspects of pedagogical developments. Similarly, SUTD faculty members are also conducting cutting edge innovations in teaching and by working with LSL team, help the LSL team to learn these technologies. So there are mutual exchanges and learning, and educational development shifts from silo-practices to collaborative practices. In addition to these, LSL plans to work with the various stakeholders such as Human Resources to see how else we can promote participation and engagement in continual development of teaching.

Overall, LSL is taking a different approach to educational development from the traditional approach of getting faculty members to attend a series of training workshops to complete a road map of training courses and clocking the training hours towards a certification. Instead, LSL attempts to engage the SUTD community in educational development as an organization

by engaging in all of the 5 educational development activities, using design-centric, project-based, teaching–inquiry projects to enhance the quality of teaching and learning so as to better support our learners. Many of LSL initiatives reflect characteristics of mature EDCs described by Gibbs (2013). According to Gibbs (2013), a shift of focus from (1) Instructor to Community Development, (2) classroom to learning environment, (3) teaching to learning, (4) change tactics to strategies and (5) quality assurance to enhancement are signs of maturing teaching and learning centres, and LSL seem to be in the right trajectory. This, of course, is not possible without collaborations with various pillars/clusters/offices within SUTD and with EDCs from the other universities in Singapore.

CONCLUSION

The benchmarking exercise is conducted to ascertain if we are in the right trajectory and the indications seem to be that we are. It is not meant to compare and compete with other universities; to do and have what others have to compete. The educational context is an important consideration in making the right decisions and setting the directions. Given that SUTD is comparatively smaller and younger than some universities, and has a unique pedagogy that focuses on design-centric project based learning that is multi-curricular and leveraging on design and technology, our approach to educational development has to be tailored to this.

Hence, our approach to strategizing LSL initiatives aims to empower faculty members and stakeholders, and create opportunities for them to excel, inspire and learn from each other to promote enhanced teaching and learning. We focus on building a work culture of collaboration and creativity and embrace design thinking approach in the form of Scholarship of Teaching and Learning. What we can also gather from this

systematic analysis is a framework to classify educational development work (Sockalingam, 2018) so that we can monitor and evaluate the outcomes and outputs on the various categories of educational development. The framework can also help us to estimate the resources and plan suitable initiatives needed.

This study also goes to show that we take a scholarly approach to our administrative work to assure and improve the quality of support for teaching and learning at SUTD.

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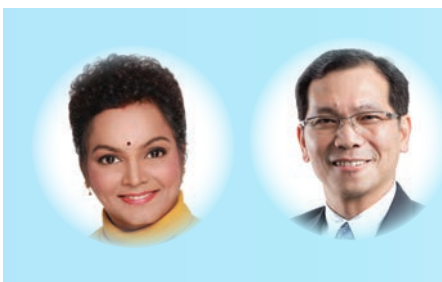
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