



Harnessing AI for Enhancing Student Support Services

The Case Study
of the University of the South Pacific

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Keywords

University of the South Pacific, generative AI technology, student learning support, education and emerging technologies.

Abstract

In the unique educational landscape of small island countries in the Pacific, the University of the South Pacific (USP) has embarked on an innovative approach to augmenting student support services by integrating Generative AI technology. This initiative specifically caters to its diverse and dispersed student body across 12 countries and five time zones, addressing a critical need for accessible and empathetic support systems in higher education. To do so, the Semester Zero, an online preparatory course using GPT 3.5-Turbo, was created. Designed for all incoming students, it showcased the potential of AI to enhance student support services in institutions with far less challenging environments than USP.

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1. The University of the South Pacific

The University of the South Pacific (USP) is a regional university in the Southern Hemisphere that was established in 1968 at Laucala Bay in Fiji at a former New Zealand Air Base. Initially, programs were offered to meet the educational needs of the newly independent regional countries. These included interdisciplinary courses in science, social sciences, economic development, and secondary school teacher training. The early 1970s saw USP offering extramural courses through its regional campuses. Over time, campuses were opened in all 12 countries. Courses and programmes up to PhD level are currently offered at USP. Beginning as a modest distance education provider for over 50 years, USP is one of the very few universities offering courses by all modes—F2F, Print, Online, and Blended from any of its 3 major and 14 other regional campuses (Latchem 2018).

A Pioneering Open Distance and Flexible Learning University

When USP was established in 1968, it was to serve a population of about 1.5 million people living in a geographically dispersed area covering over 33 million square kilometres of ocean and five time zones. Many of these South Pacific Island nations had just gained independence or were yet to gain theirs. Most of these countries lacked education institutions beyond junior secondary schools (equivalent to year 10) and were dependent upon their colonial governments to provide scholarships for higher education to their young adults. The need to provide education for the newly independent countries educated leaders and administrators led to the establishment of USP. However, it was still unaffordable for many to send their young learners to USP's main campus in Fiji for tertiary education.

Centre for Flexible Learning

USP's Extension Services, the subunit for its distance and continuing education was set up at the main campus in Fiji in the 1970s (Wallace, 1990). It consisted of management, course development and administration, and a dispatch section. The traditional printed materials were dispatched to students

with the expectation from them to submit their written assignments by post to be marked by Course coordinators and markers and returned by the same method. Campus-based tutorials were conducted for courses if country-based subject experts could be found. Occasional tutorial visits by lecturers from the Laucala campus were held. Satellite tutorials were conducted for most courses. Campus-based administrative staff provided counselling for potential students during enrolments. Over time, the academics traveling and teaching at regional campuses have increased, with blended, cohort, and flexi schools being offered at any of USP's 14 campuses. Over the years Extension Services has seen changes to its name from University Extension (UE) to Centre for Flexible and Distance Learning (CFDL) to its current name the Centre for Flexible Learning (CFL). By 2008 it also had a student learning support section.

2. Student Learning Support

Given the fact that there are more than 200 indigenous languages spoken in the South Pacific region (Lynch 1998), English is seen as a common language for communication for most purposes, including in classrooms. Thus, all courses at USP are taught in English. This leads to challenges faced by learners at the tertiary level. Studies conducted at USP by Chand (2008); Deverell (1989); Khan (2000); Khan & Mugler (2001) and McPherson, (2000) indicate the proficiency and competency challenges found among the students coming to USP. In the late 1970s the Student Support Centre was established (Khan 2000). Over time, it has seen changes in its name change from English Resource Unit (ERU) to Centre for the Enhancement of Learnings and Teaching, and Centre for the Excellence in Learning and Teaching (CELT), to Student Learning Support (SLS) and moved from UE to schools and then back at CFL.

Situated within CFL, SLS provides support for learners through F2F and virtual support. Currently, SLS specialists are based at 8 of USP's campuses. Services provided include drop-in consultations, Peer Assisted Study Sessions (PASS), workshops of academic skills, identification, and support for 'at risk' learners, online workshops and chat forums through its Moodle

platform, and tailor-made workshops for specific groups and courses. The online workshop topics ranged from numeracy skills, reading, writing, and time management skills to exam preparation skills, plagiarism, AI, and the use of software and Apps for studying. While ERU and CELT provided support for learners only at the Laucala campus, the recent innovations have seen both synchronous and asynchronous support for learners based at any of USP's regional campuses. As such, the COVID-19 lockdown did not hinder the support required by learners since the online workshops provided them with continuous support for most of the literacy and numeracy upskilling. An initiative that was designed during the COVID-19 lockdown was an online program for potential learners to support them in gaining confidence for tertiary studies.

3. Semester Zero Program

During the COVID-19 lockdown, USP saw a total discontinuation of movement of staff and students within the region and even within large countries where there were reported cases of COVID-19. USP began offering online support for its students and converted all F2F courses into rapid online mode with virtual tutorial support. Covid-19 lockdown did not only hinder studies at tertiary institutions, but it also had an impact on other sectors of the community, including secondary schools. With limited face-to-face teaching, it was expected to impact the incoming new students entering the university. The year 2022 saw new students entering university after 2 years of studying in isolation during the last years of their high school. To orient these learners to the university's study environment as well as support them with the literacy, numeracy, and digital skills required for tertiary studies, a pre-enrolment free program was designed for these learners. Called 'Semester Zero' the online course was launched in January 2022 for potential 1st year students at USP. The course included basic literacy, numeracy, and digital skills activities, as well as basic information that new students entering a tertiary institution may need.

The course was installed on a Commonwealth of Learning (COL) designed and sponsored independent Moodle platform. Moodle is the learning

management system (LMS) used at USP. To allow new learners to trial the LMS as well as gain more literacy and numeracy skills before beginning their study at USP, this program was seen both as an online orientation program as well as a skills refresher program for the potential learners.

Currently, Semester Zero has been successfully offered for the last 3 years with a good number of potential learners completing the course. Since its successful launch, it has become a regular pre-enrolment program recommended to all potential USP students. Since it is an online program, even students based outside Fiji can enrol for the course.

In 2024, it was decided that an innovative AI GPT support would be embedded in the Semester Zero program to allow potential learners to try AI for learning.

Chat GPT

Artificial intelligence is playing a crucial role in the field of education. ChatGPT has a bigger impact on academics, especially students. The primary function of a chatbot is that it is a computer programme or application that uses voice or text inputs to replicate human communication (Brush & Scardina, 2021). Thus, giving an individual a real-like chat experience. As mentioned by Molnár & Szűts, (2018) and Surendran et al., (2020) chatbots are referred to by different names in the literature, including speech agents, digital assistants, AI assistants, smart virtual assistants, and virtual agents. After reviewing the literature on chatbots' application in education, Okonkwo and Ade-Ibijola (2021) concluded that the main purpose of chatbots in educational institutions is to enhance teaching and learning. In contrast, Pérez et al. (2020), categorized chatbots as “teaching-oriented chatbots” to instruct students about a specific subject and “service-oriented chatbots” to facilitate staff-student interaction. The study made a point of highlighting how popular the use of chatbots with a teaching focus has become. In a similar vein, Zhang et al.'s (2023) research found that the most typical educational goal of chatbots is to deliver instructional content.

In another study, Pereira (2016) created a chatbot for 23 college students in the computer science field called Dawebot for a different study. Following

the lessons, the students were tested on their comprehension of the content taught in class by responding to multiple-choice questions posed by the chatbot. According to the study, 89% of the students thought it was a good idea to use chatbots for Q&A sessions. Chatbots were often straightforward for students to use, which indicates their interest in the course grew. However, it was discovered in the study by Bii et al. (2018) that teachers who used chatbots to help with their lesson plans found the technology to be helpful in the classroom.

The impacts of a chatbot-mediated teaching method on students' computer science learning motivation and performance were investigated in a study by Yin et al. (2020). The study employed a quasi-experimental design. Upon completion of the study, it was discovered that the experimental group's students, who learned through chatbots, had a considerably better level of learning motivation than the control group's pupils, who learned using a traditional technique.

The proposed AI ChatGPT system at USP had the online chatbot system designed and spearheaded by the USP and COL team. The Project Leads meticulously planned and discussed the contents and manuals to be integrated into the chat interface. Over six weeks, between mid-December 2023 till mid-January 2024, the CFL/SLS team held regular meetings to ensure that the system was finely tuned to meet the needs of the learners. This collaborative effort culminated in the successful introduction of USP SEM ZERO-GPT to the target audience.

For 2024, USP SEM ZERO-GPT was designed to provide comprehensive support to over 3000 learners enrolled in the Semester Zero course. The course was offered before the beginning of Semester One, from January 8, 2024, till February 23, 2024. Semester One commenced on 26th February 2024. The AI-powered chat tool leverages GPT-based intelligence to address a wide range of queries, ensuring that students receive timely and accurate information. The key areas of support included:

- USP Moodle Platform: Guidance on navigating and utilizing the Moodle platform, a crucial tool for online learning at USP.

- Semester Zero Course: Assistance with course-related inquiries, helping students to understand and complete their coursework effectively.
- USP Handbook and Calendar: Access to information from the extensive 600+ page USP Handbook and Calendar, offering detailed insights into university policies, academic schedules, and other essential information.

Learners used both the Chat Interface and the Moodle Interface to access the system. The Web-based Chat Interface was a standalone application that learners could access from any device. Learners could log into the system using their email and the password they received through the email. They could then log in, chat with the system, and get instant responses to their queries.

The Moodle platform has a Chat Widget plugin inside the Semester Zero Moodle page. For this, learners did not need to log in separately since they would have already logged into the course Moodle page.

AI in Open, Distance, and Flexible Learning

The regional students had very little experience using LMS, Web-Based Chat Interface, ChatGPT, or engaging with online forums. The Semester Zero exposure created digital skill development as well as confidence among learners in using online learning platforms. Previous studies by Abuhassan et al (2020), Jaques & Salmon, (2007); Lau & Shaikh, (2012); Salmon, (2011); Salmon (2014), all found that learners’ experience with an online platform in their learning environment provides them with added advantages, especially for those learners who are studying in isolation.

User Engagement

The USP’s SEM ZERO-GPT system received 619 queries from the regional users (COL, 2024). These queries ranged from content focused questions including questions on:

- the Semester Zero program,

- use of the learning platform,
- enrolment and handbook-related queries,
- USP-related questions about the enrolment procedures, programs etc.
- Invalid questions
- Other

Figure 1 shows the distribution of questions in the categories mentioned.

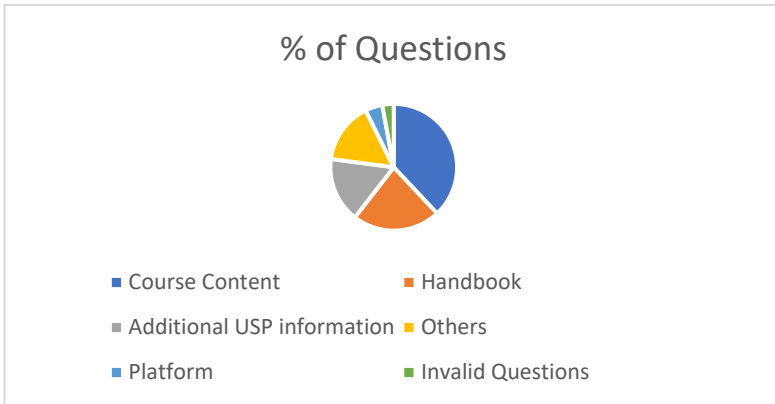


Table 1 shows the distribution of the questions mentioned above.

Types of questions	% of Questions
Course Content	38.0
Handbook	22.5
Additional USP Information	16.6
Others	15.6
Platform	4.4
Invalid Questions	2.9

The fact that 38.2% of the questions were related to the course content reflects the learners’ interest in the course. 16.6% of the queries were about USP’s Handbook and Calendar indicating the learners’ interest in seeking further information regarding their future studies (COL, 2024). Learners were also interested in finding more details about the platform used at USP, and included queries on the course’s page accessibility, navigation, and assessments.

System Interface

Around 66.7% of the queries came from the Chat Interface, and around 33.3% of the queries came from the Moodle Plugin Interface. This shows that while the Chat Interface was the preferred choice for users, the usage of Moodle Plugin was also significant. Hence, the Moodle Plugin was a successful initiative to further ease access to the system (COL, 2024). Figure 2 and Table 2 provide a graphical and tabular representation of the queries across different interfaces.

Figure 2: Distribution of queries across Interface

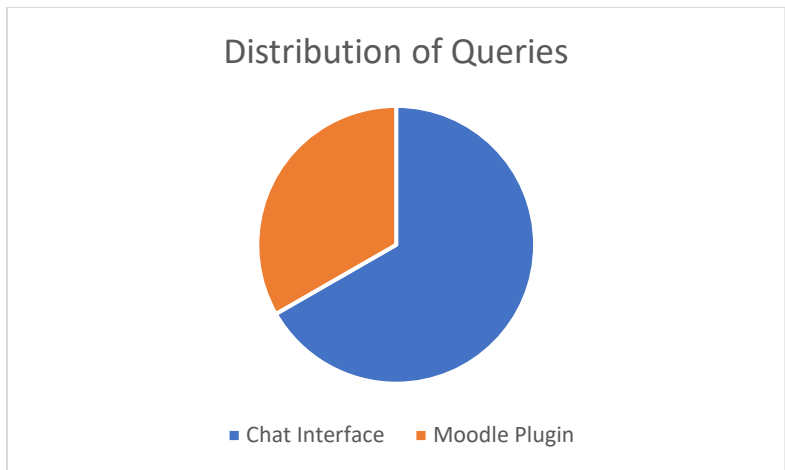


Table 2: Distribution of queries across Interface

Interface	% of Questions
Chat Interface	66.7
Moodle Plugin	33.3

The Chat Interface provided answers in real-time allowing learners to interact giving them a real-life experience. The quick response time, especially for isolated regional learners, gave them a companionship experience. This could be seen from the nature of queries and comments learners sent such as “*I am a new student. How can I succeed at the University?*”

“*Thank you for helping me 😊*”

4. Insights and Recommendation

While USP’s SEM ZERO-GPT system was innovative, it demonstrated the learners’ willingness to engage with a new system. It also showed the learners’ confidence in trialling an AI-powered tool and their interest in using the system to seek responses beyond the course or university-related questions.

There were queries in non-English, which can be resolved in future offerings by embedding simple language translation and multilingual support.

5. Conclusion

Learners anywhere in the world need first-hand information regarding the institutions and programs they plan to study. Many times, learners change their choice of institution or program when they do not receive satisfying feedback to their queries in time. This is even more challenging for USP’s regional students who cannot afford to travel to their country’s main center for basic queries. USP’s SEM ZERO-GPT system showed a potential for universities servicing regions like USP’s. The potential learners, in most cases young adults may not have the patience, nor the means to get responses to their queries regarding university studies. SEM ZERO-GPT has shown that

engaging learners even before orientation, or O Week, can be a good marketing strategy as well as guide learners on the university’s expectations of their literacy, numeracy, and digital skills. While some areas need improvement such as those for language translation, SEM ZERO-GPT at USP is a very successful innovative program that can be seen as a pioneering model for Online Orientation programs.

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7. Short biography

Dr Rajni Kaushal Chand is the Director for CFL at USP. She has been with USP for over 25 years as a student, teacher, researcher and course coordinator. She has travelled extensively in the USP region and internationally and has in-depth knowledge on Open and Distance Learning (ODL) for small and

developing South Pacific regional countries. She has presented her research findings at various international ODL, Applied Linguistics and Indian Diaspora conferences. Dr Rajni Chand has also worked in the course development and editing sections for USP's Distance Learning section.

Dr Rajni Chand holds a PhD in Applied Linguistics from the University of Otago. She received a position in the Commonwealth of Learning (COL) Women and Leadership in ODL training program and has been appointed a mentor in the COL's Commonwealth Wise Women mentoring programme. She is the regional director for PACFOLD-the Pacific Centre for Flexible and Open Learning for Development in the South Pacific. She is also a member of Board of Trustees for femLinkPacific; a major regional feminist media NGO. She has recently been appointed as one of the Global Vice Presidents of Sun Moon University.

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Ms. Raveena Goundar is a dedicated Student Learning Specialist at the University of the South Pacific (USP). Since 2021, Ms. Goundar has served as the Project Lead for the Semester Zero project, driving innovation in course design and implementation to support incoming students. Ms. Goundar also works closely with the Commonwealth of Learning (COL), collaborating on several projects aimed at fostering academic excellence and digital innovation at USP. Currently, Ms. Goundar is pursuing a PhD in Arts at USP, further deepening her expertise and commitment to higher education in the Pacific region.

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