UNDERSTANDING LEARNERS' PREFERENCES FOR LEARNING ENVIRONMENTS IN HIGHER EDUCATION

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Abstract: The higher education institutions (HEIs) are engaging with multi modal delivery for its courses and diversifying teaching and learning strategies. The reasons for multi modal delivery range from desire to increase enrolment to providing educational access to learners far and wide. In the university of the South Pacific (USP), learners constitute a diverse demographic and equally diverse is the learners' geographical context. However, there is a need to listen to learners' voice in light of their changing learning needs. The study examines learners' preference for learning environments with the aim to understand the reasons for their preference for a particular learning environment. The study has implications for all HEIs especially if they wish to engage learners from diverse backgrounds
Keywords: Learning and Teaching, Learning Environment, Higher Education, elearning, distance learning

Introduction

The advances in information communication and technologies (ICTs) coupled with World Wide Web have provided multimodal learning and teaching opportunities to learners and teachers across the globe in higher education arena. The print based DE was blamed for learner isolation but technology mediated DE has been credited with tackling the same issue of learner isolation with increased interaction and engagement. Traditional F2F classrooms as well as print based DE are both being renovated through technology. In line with global trends, the University of the South Pacific (USP) currently offers its courses via print (P), face-to-face (F2F/F), blended (B) and online (O) instructional delivery modes (IDMs)/learning environment (LE). However, there is a need to understand learners' perceptions towards these learning environments. This study chose the USP as the site for research.

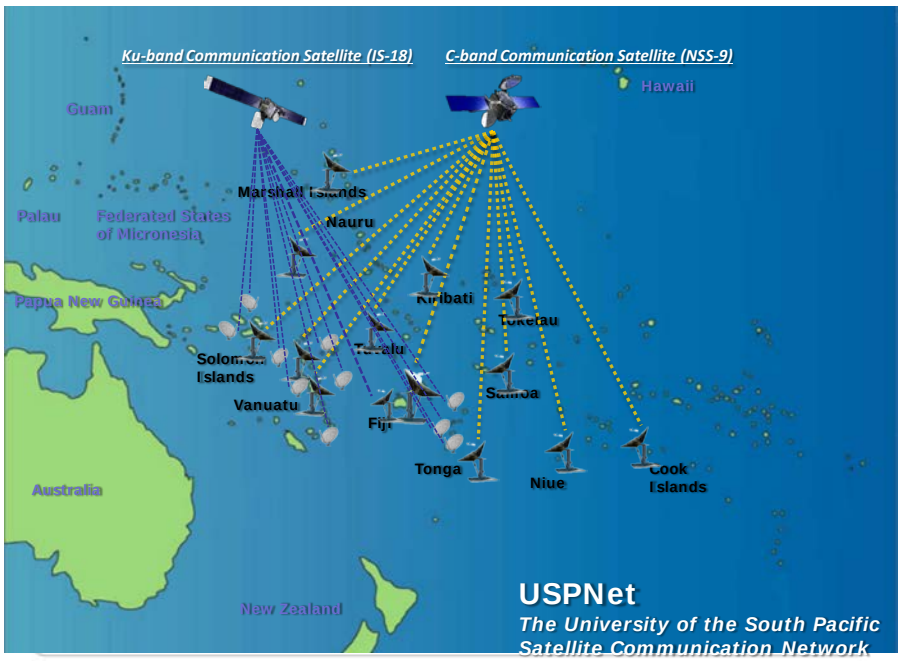
The region of the South Pacific is geographically, culturally, economically and socially diverse. In all, some twenty-two island nations make up the list of Pacific Island Countries (PICs) (SPC website). The USP, one of the two regional universities in the world, serves its twelve member countries Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu) with a combined population of about 1.4, million extending over 32 million square kilometers of ocean.

The Context

Soon after its inception as a traditional university in 1968, USP started its extension centres in 1971 to offer print based distance education (DE) to meet the need of its people in the region. The geographical dispersion of the islands in the region necessitated the use of ICTs in DE as well as different IDMs/LEs. The use of ICT provides opportunities for both asynchronous and synchronous interaction in different LEs. Thus, the use of satellite technology, which was initially employed to deliver DE tutorials and other information and communication exchange within various USP centres and campuses is now the backbone of different LEs at USP. The first enterprise to support USP's education network (USPNet) was the Pan-Pacific Education and Communication Experiments by Satellite (PEACESAT) on Applications Technology Satellite-1 (ATS-1). The primary aim of PEACESAT was to bridge the digital divide between the PICs and assist with educational and administrative support. Since then, USP has gone through incremental subsequent developments to reach its state-of-the-art ICT facilities (Lingam, Raturi and Finau, 2015).

Lingam et al (2015) pointed out that opting for Ku band network in 2011 has helped USPNet provide more stable, efficient, faster and far reaching (for remote areas and islands) services to the region, which was otherwise not possible with the C band earlier (Figure 1). This in turn has given more learners the opportunity to experience 21st century ICT integrated pedagogies, such as REACT (Remote Education And Conferencing Tool) which is a software that allows for audio-video conferencing from a personal computer and now other web-conferencing software are being trialed out at USP. With the help of the satellite system and REACT, the web-conferencing sessions provide greater interaction opportunities between the teacher and the learners from across the region. The REACT satellite conference rooms have been established in all USP campuses and centres and the learners and the teachers gather during the designated time/schedule to meet, learn and interact. The use of REACT is given high priority by the USP's Information Technology and Services department considering such a

tool is meant to enhance learner-learner and learner-instructor interaction. However, access and internet bandwidth remains a concern for the learners in the farflung islands. Asynchronous communication through the university's Learning Management System (LMS), Moodle, emails and other social networking sites (SNS) seem to remain a more preferable mode of interaction.



Courtesy: Shinya Murakami, JICA

Figure 1. USPNet coverage for the twelve member countries

The changing scene in HE globally has influenced USP, as evident in its efforts to change its traditional pedagogies, whether through innovative teaching and learning ideas or experimentation. Even print LE is Moodle-facilitated which is indicative of USP's journey along the elearning continuum (P, F, B, O) in all the four-faculties/academic units (FALE, FBE, FSTE and Foundation). However, there is a need to ensure that the value of elearning is more than just as a medium to access content for its potential, especially for communication and interaction is far greater than that (Garrison and Anderson, 2003). This is changing the 'learning ecology', providing learners with the possibility of finding the space that meets their needs along the elearning continuum. This in turn influences learners' preference for their learning environment.

A bricolage of theories combining western theories with Pacific was instrumental in providing a holistic view of the learning environments and how learners perceive them.

The Transactional Distance Theory (TDT) by Moore (1989, 1997) and Socio-cultural Theory of Cognitive Development by Vygotsky (1978) together with Pacific educators' views on learning through their works such as *Kakala* framework (Thaman, 2002) and *Vanua research Framework* (Nabobo-Baba, 2005) underpin this qualitative study.

Considering the push towards online and blended LEs in higher education in the region, it is important to examine learners' views for different LEs along the eLearning continuum. The focus of this study is to understand learners' preferences for their learning environment in PICs through two research questions:

1. What is the preferred instructional delivery mode/learning environment for the learners?
2. What are the learners' preferred instructional delivery mode/learning environment preferences?

Methodology:

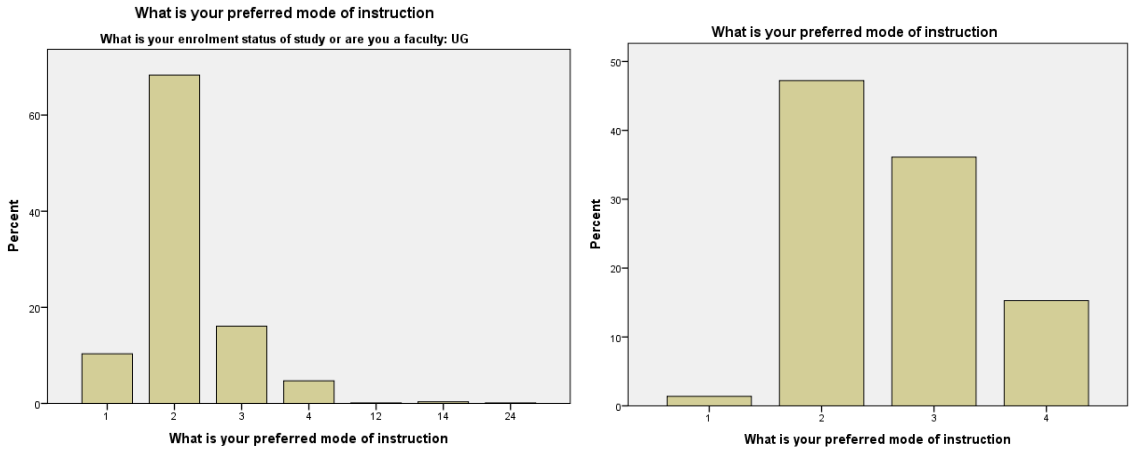
This study is a part of a larger study where the sample was drawn from USP's Laucala Suva (Fiji) and Alafua (Samoa) campuses. This research is embedded in interpretive/constructivist paradigm with the aim to understand what constitutes learner's LE and the reason underpinning it. This is a qualitative study and employed thematic analysis. "Thematic analysis is a method for identifying, analyzing and reporting patterns (theme) within data" (Braun & Clarke, 2006:6). The data was analysed for descriptive statistics to get a snapshot of the learners' preferred LE across different levels (Under Graduate (UG) and Post Graduate (PG)), age-groups, faculties/disciplines and gender while thematic analysis was applied to understand the reason for their preference.

A six step process involving 'familiarization with data set', 'generating initial codes', 'searching for themes', 'reviewing themes', 'defining and naming themes' and finally 'reporting' was followed (Braun & Clarke, 2006). The reliability and validity was assured through a pilot study (N=20) and multiple triangulation. In order to enhance the validity, the responses were read and re-read followed by a systematic analysis of the entire data set. Some colleagues and participants were consulted to confirm the themes, which enhanced validity during this entire process. The process started with the collection of codes against the deductive themes (*a priori*) as well inductive themes; efforts were made to ensure that codes were not forced to the deductive themes. The themes were reviewed and revisited again after a week ensuring themes persist and ascertaining its reliability. The themes were then refined and effort was made to maintain coherence and consistency with accompanying narrative. The emerging themes are given in table 1.

Results and Discussion: Preference for learning environment with reasons for preference

A total of 945 learners (873 UG learners and 72 PG learners) responded basic questions to collect demographics of the sample: what is your preferred mode of IDM/LE and Why? The participants responded to this question on a paper and handed it back to the researcher. The preferred IDM for all learners (UG and PG) is illustrated in the figures 2 – 5 across the faculties, age groups and gender under the section "UG and PG Learners' preference for the IDM/LE". The response to "why" is reported under the section "UG and PG Learners' Reasons for preference"

UG and PG Learners' preference for the IDM/LE



(a) (b)

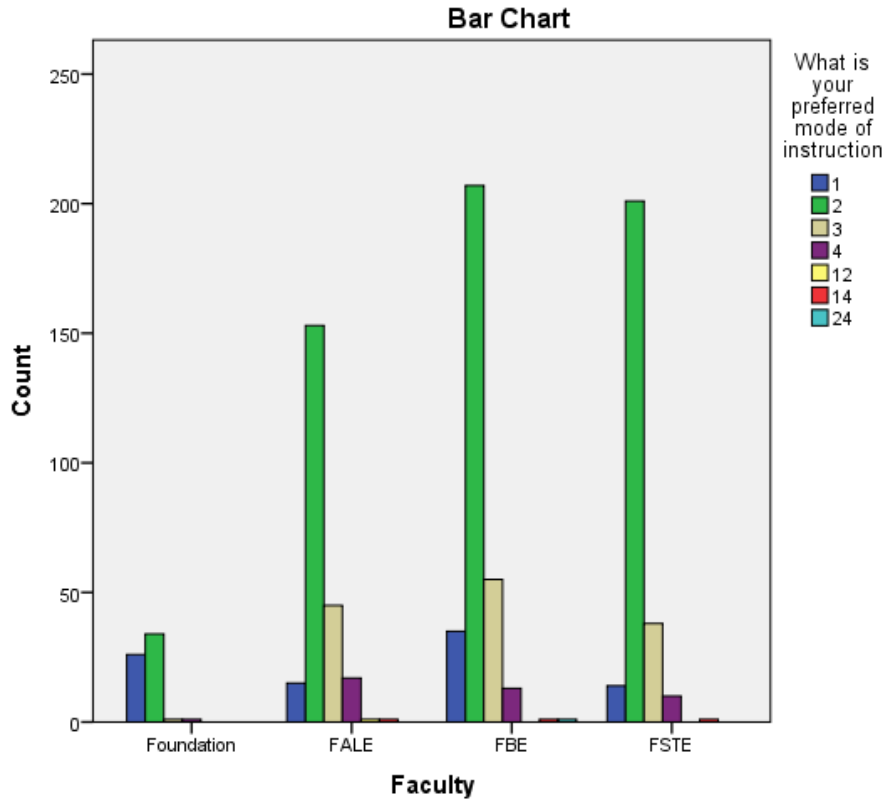
Key: 1=Print; 2=F2F; 3=Blended; 4=Online; 12=P&F2F; 14= P&O; 24=F2F&O

Figure 2: (a) UG and (b) PG learners' preference for mode of instruction within the sample

The UG learners' preference for IDM/LE (figure 2 a) shows F2F as overwhelmingly the most preferred mode and online as the least preferred mode of instructional delivery among the UG learners; 68.3% (595 UG learners) opted for face-to-face LE while only 4.7% (41 UG learners) opted for online LE. Additionally, a very small number (5) of the UG respondents indicated a preference for two of the choices (print and online). Whilst, the PG learners' preference for IDM/LE (figure 2 b) shows F2F as the most preferred mode, Print is rated as the least preferred mode of instructional delivery; 47.2% (34 PG learners) opted for F2F LE while only 1.4% (1 PG learner) opted for Print LE. It is seen, though that 36.1% (26 PG learners) opted for Blended and 15.3% (11 PG learner) opted for online modes indicating a total of 51.4% (37 PG learners) opting for LE that made use of VLE to a greater extent.

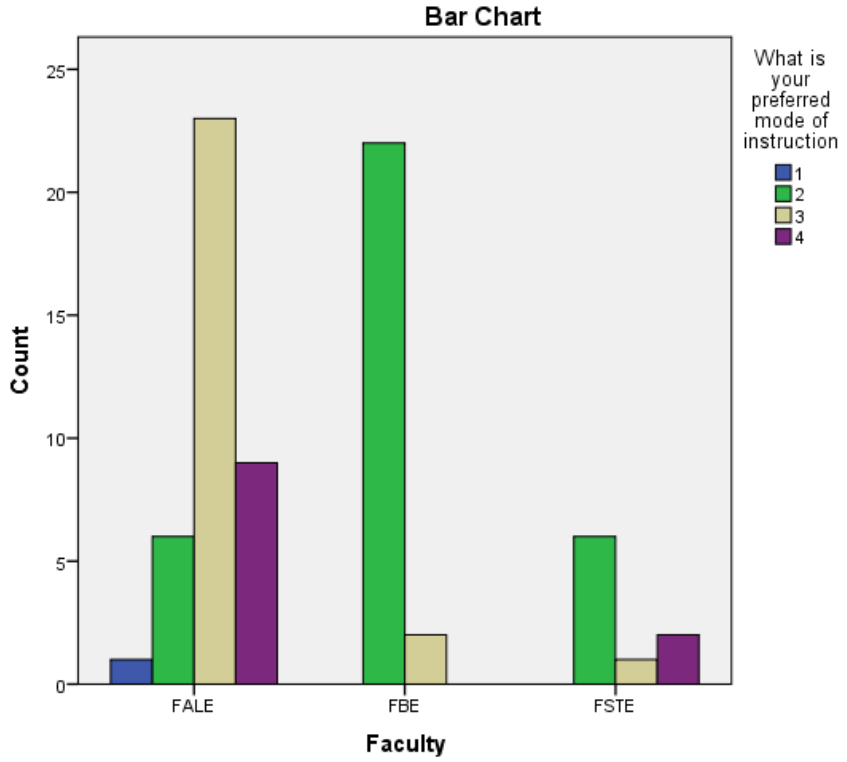
Considering the preferences for blended, online and print in both the groups, could the different learning needs in the two groups be affecting their preferences? A further analysis of preferences based on faculty/discipline (Figure 3 a and b), age (Figure 4 a and b) and gender (Figure 5 a and b) was carried out next.

UG and PG learners' preference for IDM/LE within each faculty



Key: 1=Print; 2=F2F; 3=Blended; 4=Online; 12=P&F2F; 14= P&O; 24=F2F&O

Figure 3 a: UG learners' preference for mode of instruction within each faculty



Key: 1=Print; 2=F2F; 3=Blended; 4=Online

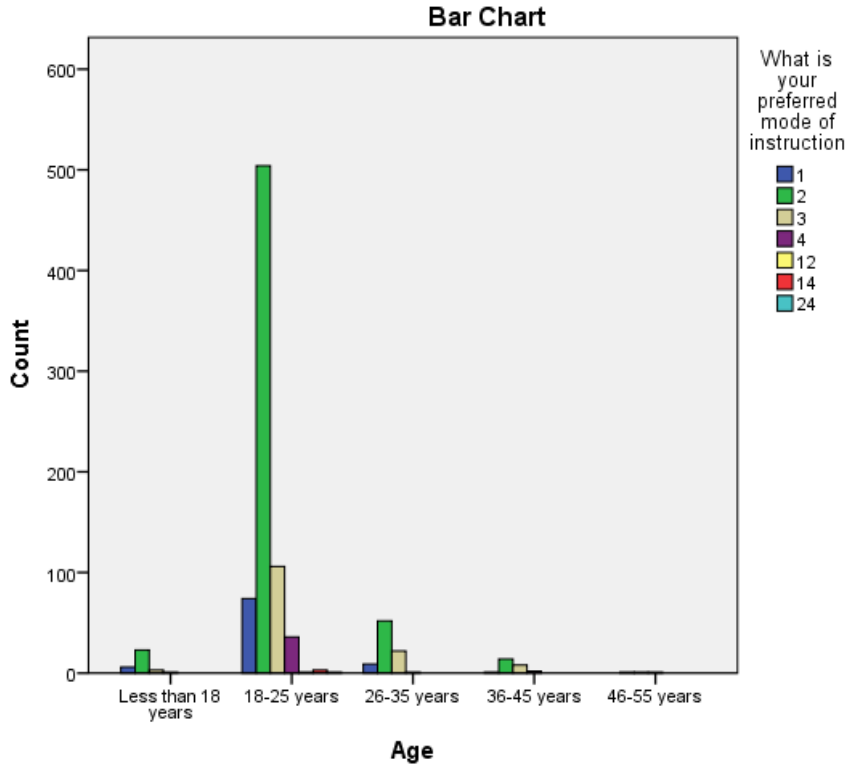
Figure 3 b: PG *learners' preference for mode of instruction within each faculty*

The analysis of UG learners' preference for the mode of instruction on the basis of faculty (figure 3 a) indicates a strong preference for F2F mode runs across all four faculties (76.1% of UG learners in FSTE and 65.9% in FALE and FBE prefer f2f). The practical nature of subjects in FSTE could be one of the factors to influence

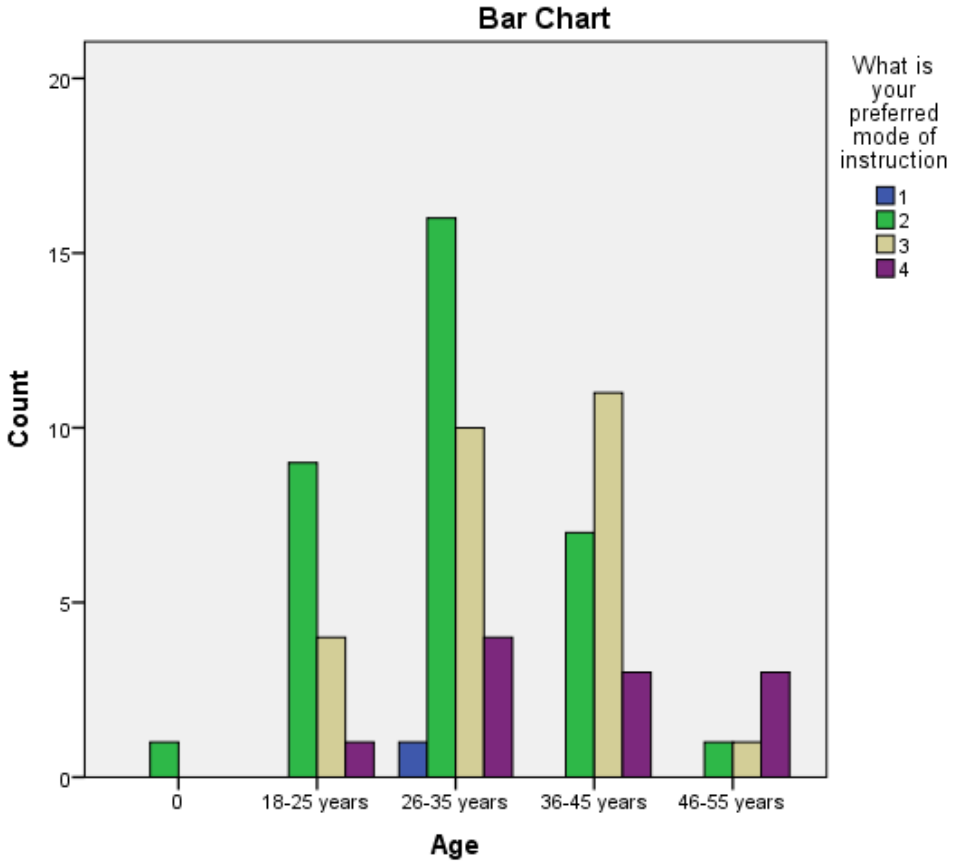
learners' preference for F2F, a point worth further investigation. In Foundation, 54.8% opted for F2F, 41.9% opted for print based DE. The preference for print by foundation learners is quite intriguing considering these are teen-aged learners who are technology savvy (Raturi & Chandra, 2016) and yet they prefer print based learning environments. The preference for print offers yet another point for further investigation. Print and online emerged as least popular choices amongst the UG learners in this study.

The analysis of preference for the mode of instruction on the basis of faculty (figure 3 b) reveals F2F mode as the most preferred option by learners in FBE and FSTE and Blended as the most preferred option by learners in FALE. A 66.7% of PG learners in FSTE and 91.69% of the PG learners in FBE preferred F2F mode, 58.9% of the PG learners in FALE preferred blended mode. On the other hand, 2% preferred Print and 23% preferred Online amongst PG learners in FALE, 8.3% preferred Blended amongst the PG learners in FBE and 11.1% preferred Online amongst the PG learners in FSTE; Print emerged as the least popular choice amongst the PG learners in this study. Interestingly, not a single learner opted for Online in FBE while 22.2% opted for Online in FSTE. The result for PG learners in FALE were similar to the study conducted in 2009 with a sample size, N = 92 (Raturi, Hogan & Thaman, 2011).

UG and PG learners' preference for IDM/LE within each age group



Key: 1=Print; 2=F2F; 3=Blended; 4=Online; 12=P&F2F; 14= P&O; 24=F2F&O
Figure 4 a: UG learners' preference for mode of instruction within each age group



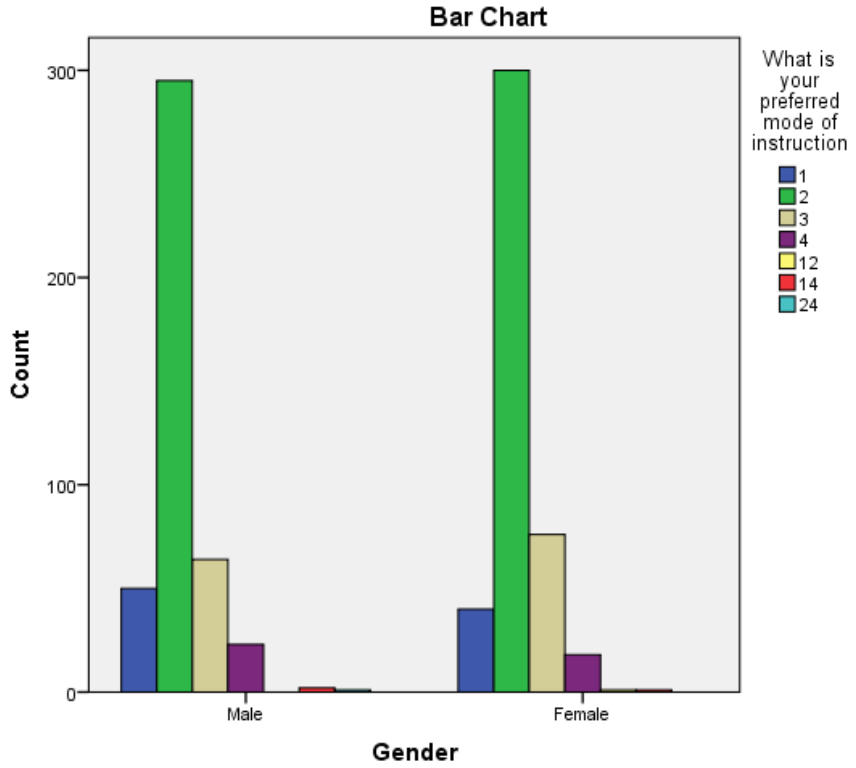
Key: 1=Print; 2=F2F; 3=Blended; 4=Online

Figure 4 b: PG learners' preference for mode of instruction within each age group (Note: "0" on x-axis refers to one learner who did not disclose her/his age group)

A total of 725 UG learners out of 870 valid cases fall in this group of 18-25years out of which 504 (69.5%) of these learners preferred the face-to-face mode whereas 36 (5.0%) preferred the Online mode (figure 4 b). The second dominant age group is 26 – 35 years; out of 84 UG learners in this age group, 52 (61.9%) preferred the F2F while only 1 (1.2%) preferred the Online mode. Interestingly, F2F mode emerged as the most preferred mode while Online was least preferred regardless of age of the learner. It is obvious that young learners consider coming to university as an important part of their learning, it would be worth investigating the factors that influence their preference for F2F.

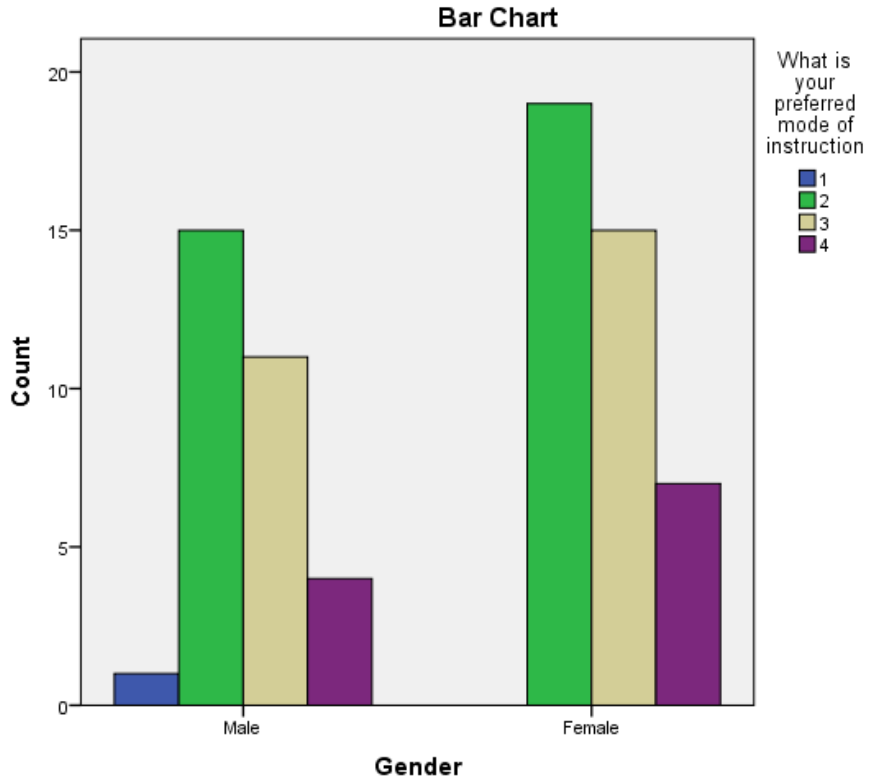
The most common age group amongst PG learners is 26 – 35 years as evident in figure 4 b; 31 PG learners out of a total of 72 valid cases fall in the age group 26-35 years out of which 16 (51.6%) of learners preferred F2F mode whereas 10 (32.3%) preferred Blended and 4 (12.9%) preferred Online mode. The second dominant age group is 36 – 45 years; out of 21 PG learners in this age group, 11 (52.4%) preferred Blended mode, 7 (33.3%) preferred F2F and 3 (14.3%) preferred the Online mode. The F2F mode emerged as the most preferred mode with the younger age group while the older age preferred the Blended/Online mode. The preference for blended and online more by older learner is interesting and requires further interrogation.

UG and PG learners' preference for IDM/LE within each gender



Key: 1=Print; 2=F2F; 3=Blended; 4=Online; 12=P&F2F; 14= P&O; 24=F2F&O

Figure 5 a: UG learners' preference for mode of instruction within the genders



Key: 1=Print; 2=F2F; 3=Blended; 4=Online

Figure 5 b: PG learners' preference for mode of instruction within the genders

The number of males (N = 435) and females (N = 436) is effectively equal in this sample (N = 871); 2 learners did not specify gender. In this sample, 300 females (68.8%) and 295 males (67.8%) preferred the F2F mode

while only 18 female (4.1%) and 23 male (5.3%) preferred the Online mode. Therefore, the F2F LE emerged as the most popular one. On the other hand, the online environment was the least popular in all categories amongst the UG learners in this study (figure 5 a).

The number of males (N = 31) and females (N = 41) indicate that a higher number of females enrolled for PG studies in this sample (N = 72). The most preferred mode was F2F amongst both gender as evident in the figure 5 b. In this sample, 19 female (46.3%) and 15 (48.4%) preferred the F2F mode while 7 female (17.1%) and 4 male (12.9%) preferred the online mode. The face-to-face LE emerged as the most popular one while the online environment was the least popular in both categories amongst the PG learners in this study. However, the percentage for blended mode was reasonably high indicating an overall inclination towards modes that utilize more technology in both categories.

UG and PG Learners' Reasons for preference

A total of 859 out of 871 UG learners offered reasons for their LE preferences. A total of 88 valid responses for Print, 592 valid responses for F2F, 136 valid responses for Blended and 38 valid responses for Online and 5 for dual-preferences were registered. The majority PG learners (70 out of 72) gave reasons for three LEs (F2F, B and O). A total of 32 valid responses for face-to-face, 26 valid responses for blended and 10 valid responses for Online were registered from PG learners. The reasons for each LE (P/F2F/B/O) for the two groups of learners (UG/PG) were analysed within these groups following thematic analysis. Table 1 provides an analysis to understand how frequently each theme emerged in different IDM/LE.

Table 1. Frequency and Percentage for Reasons for Preference IDM/LE for ALL learners in four LE

LE	Emerging Themes	UG Frequency/N	UG %	PG Frequency/N	PG %
PRINT	Time	32 (88)	36	N/A	N/A
	Convenience and Flexibility	42 (88)	48	N/A	N/A
	Interaction with Instructor/Instructor (teacher) Presence	10 (88)	11	N/A	N/A
	Autonomy	14 (88)	16	N/A	N/A
	Use of ICT and its Reliability	8 (88)	9	N/A	N/A
	Cost	7 (88)	8	N/A	N/A
F2F	Efficiency and Effectiveness of medium and the Time Factor	298 (592)	50	10 (34)	29
	Real time/Practical Needs and Interactive LE	248 (592)	42	16 (34)	47
	Interaction with Instructor/Teacher and their Role	116 (592)	20	11 (34)	32
	Collaboration and Interaction with Peers	183 (592)	31	9 (34)	26
	Socialisation*, Convenience and Enjoyment	141 (592)	24	5 (34)	15
	Access to LE and support within LE	140 (592)	24	7 (34)	21
	Control over learning/staying focused	60 (592)	10	3 (34)	9
Blended	Duality of LE and Course Structure	86 (136)	63	13 (26)	50
	Efficiency and Effectiveness of medium* and the Time Factor	43 (136)	32	7 (26)	27
	Interaction with Instructor/Teacher Presence	26 (136)	19	4 (26)	15
	Autonomy	42 (136)	31	4 (26)	15
	Access to LE and Support with LE	67 (136)	49	8 (26)	31
	Convenience, Flexibility and Enjoyment	29 (136)	21	8 (26)	31
Online	Convenience and Flexibility	20 (38)	53	3 (10)	30
	Time	16 (38)	42	3 (10)	30
	Interaction	8 (38)	21	2 (10)	20
	Autonomy	5 (38)	13	4 (10)	40
	Course Structure	5 (38)	13	4 (10)	40
	Enjoyment	NIL	-	3 (10)	30

*Key: *Only for UG learners*

The analysis of the learners' reasons for preference is indicative of what constitutes their ideal LE. Words like 'interaction', 'feedback', 'immediate', 'understanding', ' easy', 'enjoyable', 'interesting', 'convenient', 'reliable', 'cheap', 'flexible', 'practical', 'first hand', 'interactive', 'efficient', 'effective', 'challenging', 'exciting' 'success' appeared frequently in this section. One word that dominated the conversations was 'interaction' and other connecting words with interaction were 'lecturer/tutor', 'colleagues/learners', 'content'.

Theme 1: Time

Print LE: The 'time' appeared as a crucial factor for Print based learners in this study and it came up most frequently (26 times) amongst all registered responses in the P LE category. The time factor was related to various reasons such as 'work', 'family', 'commuting time' and many commented on 'self-study' or just wanting 'more free time' to themselves. A typical response noted how time was 'less wasted in print and more effective':

> It saves time during a week to go to a class which are used in doing some assignments which helps me. Learn a lot rather than going in a class wasting time in lectures. One tutorial per week is enough to gather information from tutor about what is important to learn in that particular unit. (UG-P-60)

F2F LE: The UG learners in this F2F LE placed high value on the efficient and effective utilisation of their time and acknowledged role of ICT in enhancing their learning. However, quite frequently learners indicated that the option of not depending on ICT was 'reliable' and often saved time. The ability of the LE to provide instruction in a way that made it clear and understandable to learners with ample opportunities to interact was highlighted in the responses too. Some learners reported that 'dealing with problem areas with the teacher helps to tackle it effectively', and that 'ease of communication makes it more meaningful'. Other strategies that contributed to effective and efficient learning were also mentioned. One learner shared, "Learning is much more effective when the learning is able to create a good relationship with the person facilitating one's learning and this is possible through active involvement both parties in various activities." (UG-F2F-285).

The PG learners regarded F2F LE to be a most efficient and effective medium because it assisted their understanding without wasting much time (this is compared with discussions on VLE, which are sometimes prolonged) as they preferred prompt response to their queries.

The F2F LE was considered efficient and effective by both UG and PG learners in terms of prompt feedback and continuity in classroom discussion, unlike virtual discussions.

Blended LE: Learners found Blended LE a faster medium where learning took place effectively and time intricately linked to it; an indication of learners' changing needs and lifestyles. Despite the challenges with ICT access and experience for some learners, many reported their desire to master ICT usage for their learning advantages. A combination of online and F2F components in a blended LE seemed to provide efficient and effective LE urging learners towards becoming independent learners. The 'time' factor was linked with learners' need to 'work' and give time to family but today's learner showed the signs of autonomy too with changing lifestyle; as was evident in a learner's comments: "Blended as it is a combination of both [F2F and O] and my time is balanced out well through this mode. I don't have to be on campus everyday attending class as a result of my DF studies thus giving time for other things." (UG-B-60)

The PG learners were mainly working full time or part-time with very few studying as full time students in the university. This LE was perceived to provide them enough time and flexibility to carry out other activities or even extra consultations helping them manage their time well. "I have time to meet my coordinator at a fixed time to clarify doubts. Some statements in the course books really need explanation where lecturer's explanation is highly needed." (PG-B-17)

Online LE: It seemed important for some learners to be able to control the time spent on activities which is why some find online LE as suitable option. "It saves time and also money from travelling to USP every day since I am from west (of Viti Levu, Fiji) and plus daily expenses are expensive nowadays." (UG-O-9)

The control over their time is important for the PG learners considering the majority was working full time/part time. As the majority of PG learners had access to facilities that enabled their online learning, they felt this LE could allow them to manage their time well and maintain a good balance between their work, study and family. As one of the learner confessed: "It saves time because since I am working at time I have to rush to class. Online learning is easy as I have internet at home and work I can easily access it." (PG-O-2)

Interestingly, 'time' emerged as a theme across all four LEs depending on the learners' situations.

Theme 2: Convenience and Flexibility

Print LE: Some learners considered the print-mode 'convenient' for its 'course-structure' and 'flexible nature in terms of deadlines and attendance for tutorials'. Some learners considered 'flexibility' to be an important factor and felt that it gave them more control over their learning. The print course materials were 'appreciated' for its 'ease of reading' and convenience together with option of course structure on Moodle typified by such comments as: "…it has a course book where materials are given to you and notes are made for you. I don't have to go for lectures. I can listen to lectures online when I have time and the assignments make sense." (UG-P-15)
The flexibility to 'read and work from home combined with tutorial time in school' provided some learners 'convenience' while some liked the 'pace', which seemed to have an effect on the workload.

F2F LE: The learners often described F2F-LE as very convenient for them. This convenience probably helps them to enjoy the whole learning experience. Hence, another point raised by learners was being able to enjoy what they were doing. ICT was considered an issue, with internet being unreliable for some learners; the learners who had no problems with access to ICTs found Moodle a convenient platform that supplemented F2F experience. In addition to convenience and flexibility, the learners viewed LE as a place where the social aspect of learner is nurtured together. The ability to create a sense of ease and excitement amongst learners' was yet another benefit learners' perceived in F2F. Some considered delivery of content in small quantities in a regular manner helpful for sustaining interest while others considered being able to interact F2F as ideal: "F2F class is more interesting when people/lecturers actually assist in their explanation of topics for better understanding. Also it is easier and strict but good." (UG-F2F-150)

The PG learners found instant responses and in class sharing of knowledge as a convenient way of learning. The LE also provided them the necessary stimulant to enjoy the course and felt comfortable doing it especially if learners had switched programmes at PG level.

Blended LE: The convenience of the blended appeared to link directly with its dual-mode nature, i.e. its format/course structure. The online component was viewed as a means to be 'guided online', 'access instructors as well as do the course work where I live'. These added to the convenience and flexibility aspects of the LE. The 'option to come to university less frequently' enabled 'convenience' for learners, which in turn seemed to provide learners the 'time' to take care of family, work and exercise their autonomy and so on. In the words of another learners, the Blended mode was, "Convenient for my family time, travelling time, expenses and spending all day in campus is sometimes waste of time. I work well at home. I am a wife and a full time student." (UG-B-11)

Convenience was afforded through part dependence on F2F and online for PG learners; considering the electricity and internet connectivity issues within the region. The learners' reasons for convenience varied and the cost for commuting versus cost for ICT access is worth further investigation. However, the readiness to embrace ICT for their future career was quite evident in their responses.

Online LE: The Online LE was deemed convenient because it allowed learners to work from any place any time, which in turn provided learner flexibility to prioritise their needs in life as well as maintain a balance between work, home and study. As shared by a respondent: "You can stay back home. Enjoy your family while in study. Work at your own pace at time convenient to you. Save money (accommodation, transport, food except internet bill). More portable than other modes." (UG-O-6)

Convenience for PG learners meant they were able perform all the activities related to the course at their own pace and time be it interaction, the readings or learning on their own. Some learners indicated that they enjoyed the course as it offered them convenience. Others gave a mix of reasons for their convenience and flexibility to study at their own pace and time.

> For me as a full time worker, it is convenient. Also I think I learn better online, I think it is also my age too…after a few hours in the F2F class, I feel sleepy but online, I can study in my own time when it is convenient to me and this helps me focus better, focus more...I can think and reason out things better when my mind is clear. (PG-O-6)

Theme 3: Interaction with Instructor/Instructor presence (Teacher presence)

Print LE: Learners considered the interaction with the instructor for tutorials important for various reasons but limited interaction time with tutor/tutorial time was considered 'time-effective' and 'reliable and easy to cope

with facilities and tutors'. Typically: "…it [interaction] is important for print mode students since students' life becomes easy as there are less chances to fail their units." (UG-P-14)

F2F LE: The importance of the teacher's role was the one that stood out in the learners' responses (both UG and PG) as the most important feature of F2F learning. The 'interaction with teacher as the sole knowledge provider to facilitator', 'interaction with teacher from cognition to support' are the emerging sub themes although there were a number of intersecting points of interest amongst these two sub themes in learners response. Over 50% of the responses mentioned some form of teacher support/role. This emphasised the enormous responsibility of the teacher/instructor as well as the importance of learners' expectations.

a. Interaction with Teacher/Instructor*:* From *sage on stage* to *guide by the side*

The interaction with teacher/instructor or even the mere presence of teacher in a F2F LE seemed important from a variety of viewpoints ranging from the sole knowledge provider to facilitator and importance of same physical vicinity to enhance learners' interest.

> Because I prefer to look at the lecturer while she/he is explaining the notes. This is because listening and reading all the time demotivates me in my study. I get bored and sleepy when I listen and read all the time [on my own]. Watching the lecturer makes me enjoy the class because the actions or teachings are enjoyable. They make you smile, laugh and learn as well. They also give advice to you during class which is good and relevant to our studies and lives. (UG-F2F-36)

While the enormous 'trust' in having the teacher teach in the same physical vicinity was considered important, so was the frequency for 'interaction', teacher as the ultimate 'owner of the knowledge', 'solution to all problems', opportunity for 'same time response', 'all time access' in conjunction with 'response time' and 'instructor access'. This highlights teacher immediacy in the LE.

b. Interaction with teacher (instructor)*:* From *cognition* to *affection*

The role of instructor was one where instructor was viewed to provide the necessary support when needed, be it advice on the subject or just encouragement; both were considered equally important. The learner's feeling of 'comfort and success' was also attributed to the 'interaction with instructor': "We are able to interact with our lecturer while having lectures so it makes me feel comfortable since I have any enquiries I can go and see the lecturer." (UG-F2F-191)

The learner's satisfaction with the process of learning and cognition was attributed to the instructor's immediate help enabling clarification and dialogue which were highly valued by learners. The interaction with instructor for specific purpose when it came to cognition and learning was highlighted be it for 'understanding abstract concepts' or 'scaffolding' or 'learning with tutor'. The learners appreciated the F2F environment in which instructor constituted an important part. The value of human interaction was highlighted too; something that educators would need to bear in mind since learners consider human computer interaction as artificial. An informant stated:

> It's real. I get to meet real people (tutor, lecturer, professor) who deal with my learning experience directly. I learn from my mistakes on the spot and given positive and negative feedback at the same time; I am able to explain my problem to my mentor much more better rather than sending email. (UG-F2F-539)

The PG learners too for their preference for F2F LE considered 'Interaction' with instructor as the most important reason. The role of instructor came out not so much as a 'sage on stage' but rather as a 'guide by the side' amongst the PG learners' responses. These were, however, exceptional cases where the role of the instructor as the 'sage on the stage' was favoured. Immediate feedback from instructors in F2F LE emerged as one of the key characteristic. As one student observed: "I learn better in a class environment and prefer structured courses that doesn't leave too much in student's hands to pursue in terms of information/answers. I like asking questions and getting immediate feedback rather than relying on email communication." (PG-F2F-31)

Generally, the PG learners considered teacher's guidance and their role a very important aspect of F2F LE. It is evident that the all learners have high regard for their 'instructor' consider instructor an important part of their learning environment.

Blended LE: The interaction with the instructor and instructor presence gave learners much assurance for learning success. Some learners preferred 'human interaction' within the same physical vicinity; however, for some, online interactions with instructor were better options especially communication via email for those too shy to question in person. It emerged clearly that the learners opted to lean on instructors only when it was an absolute must, although they considered instructor presence important. The learners expressed the desire/need to

be part independent and this LE seemed to enable that. The important point that learners raised was that they could make use of the instructor's presence to different extents depending on their needs. It was generally felt that the blended mode provided more opportunities. As one learner commented: "[The Blended mode] helps me to do a lot of thinking as well as learning on my own without constant guidance by lecturers or tutors, they are there though if need be and if I need to be corrected and directed in the right path." (UG-B-110)

The changing role of the instructor was evident in the learners' responses; however, the instructor presence was still a desirable factor. The need to interact with the instructor, peers and the content was reflected in the responses. The interaction with learners from the region through the online component of blended mode was appreciated by the learners, alongside the general appreciation for F2F discussions in the class. It also appeared that learners appreciated a well-designed course structure on Moodle highlighting how online content supplements teacher's guidance during the F2F sessions. The affective needs of learners even at this level were notable and are evident in a learner's views: "Online component helps with everything being documented, one can refer to it easily and it is transparent. F2F component helps with the social connection, which is important to facilitate learning. Also come concepts that can be taught F2F may be difficult to be taught online." (PG-B-7)

Online LE: The learners considered interaction for a variety of needs such as interaction with the instructor to gain information, interaction with other learners to exchange ideas and interaction with the content to gain information anytime, anywhere. However, the interaction with the content appeared as the most popular interaction because it could be carried out anytime anywhere. Interactions with content and instructor were reflected in a few earlier responses quoted for online LE so far. A response for interaction with learners is exemplified here: "…because it is more interesting. You can interact with many onliners with different ideas and topics. "(UG-O-33)

The PG learners indicated that interaction with instructors, peers and content helped and highlighted the need for more interaction; a point that needs to be taken into consideration given the connectivity issues. One learner informed that the Online LE allowed her to

> …get to ask Q from my other colleagues without pressure of who is asking [adding that she was able] to post ideas to which discussions will form… [and that] Additional readings are hyper linked to topics so readings of notes are easy and straight to point… [and stressed] coordinator responses is what I think is much needed. (PG-O-1)

The three types of interaction (learner–instructor, learner–learner and learner content) have been noted in learners' responses here. Interaction was one of the most frequently appearing words across all four LE.

Theme 4: Autonomy

Print LE: Some learners showed a keen sense of ownership towards their learning by expressing 'not having to rely on lectures', taking control of their actions and the desire to be an independent learner. Learners believe that taking responsibility would enhance their cognitive capabilities. Another UG learner articulated the challenges and benefits that come with autonomy: "…test your own potential to do the course…lot of encouragement and challenging…more time for self-study…comfortable to study from home or dorm…improve self-learning and reduce dependency on lecturers and tutors." (UG-P-87)

F2F LE: *Autonomy* emerged in learners' response that expressed their determination to "stay focused in studies" and take "control of [their] learning".

Blended LE: The learners noted that the blended LE helped them to create their own learning experience, which in turn nudged them towards 'autonomy'. The learners indicated their desire to be at least partly independent learners and their responses exemplified this desire: "Does not require us to attend face-to-face classes every day, therefore saves money on travelling. Allows us to take control of our own learning and try to become independent learners rather than depending on the lecturers and tutors often." (UG-B-13). Many responses gave an indication of the 'urgency' to be independent learners as echoed in the comments of a learner: "…we must learn by ourselves" (UG-B-5).

The PG learners considered blended a suitable environment to develop independent learning skills at their own pace and time. One learner said, "It enables me to work with the teachers and at the same time create some independence on how I approach my learning." (PG-B-12)
The learners' desire to exercise autonomy (sometimes) is the learning need of 21st century PI learners, an important point for educators to know so that they can figure out how to enable it.

Online LE: The learners liked being independent and this was reflected as one of the reasons for their preference too. According to a participant: "because it doesn't demand a lot of our time coming to school for classes and we can always depend on ourselves." (UG-O-34)

'Autonomy' is another aspect that has emerged across all four LEs; this is yet another trend among the 21st century PIC learners.

Themes specific to certain LE

The next eight themes were prominent in specific LE/s but the essence of these could be derived as a by-product of analysis even though scant. Therefore, there is a need to investigate factors affecting the LE further.

Theme 5: Use of ICT and its reliability

Print LE: Moodle is now integrated in all print-based DE courses and the use of email and discussion forum was evident from the learners' responses; with some learners acknowledging its use to enhance their learning. At the same time, some learners mentioned the use of print based resources as more reliable than online resources (mentioned under 'convenience and flexibility' earlier). This difference in preference depended on learners' individual access to ICT. Those with access to discussion forum felt this provided them an avenue to discuss more freely as some were shy to discuss in class. ICT access enabled them to: "...access notes from Moodle at home, …contact tutors through email and discussion forum… keep up-to-date with information." (UG-P-90)

Considering the ICT access and infrastructure in the region, it is an important factor, which needs further investigation in different LE.

Theme 6: Cost

Print LE: The cost of the course and the cost for commuting were reported as determining factors by some learners in P LE. Considering the learners demographic and their socio-economic background, impact of *cost* on LE demands investigation.

Theme 7: Real-time/practical needs and Interactive LE

F2F LE: The presence of the human touch in the LE was deemed essential for various reasons with repercussions on the ability to conduct learning activities with 'resources' (physical artefact, physical presence of people) in a live/physical environment. Learners preferred 'hands on' experience, 'learning by listening and watching the teacher in class' and 'opportunity for F2F conversations'. The authentic learning experience with 'real life examples' and constant in-person interaction was deemed essential for their learning success. Science learners expressed a clear need for physical laboratory sessions over virtual. It was evident from the responses that the learners saw F2F as the most interactive LE, which provided them enough challenge to reach their ZPD and engage in meaningful construction of knowledge; however, the teacher remained the MKO in this equation. At the same time, use of ICT in creating higher level interactive environments was acknowledged by the learners and so was the challenge of using ICT: "Learning is much more effective when the learning is able to create a good relationship with the person facilitating one's learning and this is possible through active involvement of both parties in various activities." (UG-F2F-285)

The PG Science learners expressed need for hands on experience more while others commented on the need for live interactive discussions to make the learning process worthwhile; the F2F LE seemed to provide these according to this group of PG learners. According to a learner: "More practical can be done [for] hands on experience and…to evaluate performance." (PG-F2F-13). The interactive aspect for PG science learners generally focused more on laboratory/field work while PG learners in other disciplines focused more on dialogical sessions for an interactive LE.

The interactivity with/without use of ICT was considered useful for learning. The real-time learning was important to a lot of learners, especially the learners engaged in subjects requiring practical skills such as Science students. Another important point that came out of this theme was the learning style of Pacific Island learners and their preference towards the LE; an area that requires further investigation.

The *real-time/practical needs and interactive LE* did not seem to bother learners who prefer the other three LEs (P, B and O).

Theme 8: Collaboration and Interaction with Peers

F2F LE: UG learners enjoy working with peers or in groups for it acts as an important source of information gathering and processing during the F2F classes. It appeared that F2F collaboration with peers helped learners exchange and express their ideas better. The 'ability to interact directly with teacher and learner at the same time in F2F', 'gaining confidence and knowledge through F2F interaction', 'opportunity to know the person during F2F interaction' were some of the benefits perceived by learners in F2F. The learner's environment where peers can take turns to act as MKO was seen to construct meaningful knowledge. Learners considered F2F LE conducive to 'sharing of information, ideas with peers', 'co-construction of knowledge with peers' and 'maximising exchange of knowledge and ideas'.

Theme 9: Access to LE and support within LE

F2F LE: Some learners commented that the F2F mode provided access to more resources and support than any other LE. The extra resources were viewed to provide more opportunities for learning and helped to maintain focus. This in turn helped them carry out important activities for their learning processes. The learners equated the cost of course at the university to its value for quality learning with all the resources and support. The access to more resources was also seen as a way to keep them focused and up-to-date with information. Whether access was to detailed notes, increased contact hours with an instructor, reminders and notices, it was seen as a factor influencing their preference for LE.

A 'support-system' was considered an absolute must and F2F LE seemed to provide the best support to the learners; increased and continuous support from instructors in F2F LE was considered a safety net for learners. The learners valued F2F interactions with tutors as more reliable than online consultations and they felt prompt online consultation could be considered in a Blended LE. However, the instructors were considered the most important extended resource in F2F LE and an indispensable part of the learner's LE.

> I like the interaction with the teachers and group discussions in class. I learn better using all my senses and retain more that way, than by merely reading off a computer screen. F2F also gives more value to what you pay in fee for tertiary studies. Its not a short cut method of learning. (UG-F2F-590)

The learners were mindful of the pitfalls in their learning journey and acknowledged their weaknesses and the need for an antidote for them; the university's physical environment with all its resources acts as one such 'salvation'.

This group of PG learners also appreciated F2F LE for the extended resources and support it provided. This is evident in the response of one of the learners: "I like the interaction and use of resources such as computer labs. (PG-F2F-21)

Blended LE: The duality of the mode brings the best of the two worlds. The learners reported blended LE provided them access to F2F as well as online LE resources. Therefore, some learners found the blended LE reassuring and identified access to resources and support as one of the reason for their preference. According to a learner: "More flexibility in location…frees up schedule. Also [the Blended mode allows access to] more resources…tutors and lecturers online." (UG-B-90)

The PG learners saw blended LE as providing them with access to resources and academic support. One learner reported she opted for blended, "…because it allows for some flexibility. Not entirely so that you can have some feedback through your course while you have the freedom to learn at your own pace, there is some sort of 'grounded' approach to help you keep check with your progress." (PG-B-21)

The access to resources and support was an important feature for Blended learners especially as the access to 'support' has been noted to tackle 'isolation' which is considered a major deterrent in DE in PICs (Thaman, 1991) as well as around the world.

Theme 10: Duality of the LE and Course Structure

Blended LE: The fact that blended is a mix of online and F2F LEs seemed to have worked in favour of this LE as this was the most popular reason given for its appeal to more than 50% of the learners in this group. The learners' responses included 'best of two worlds', 'flexibility to use the mode as convenience', 'normal human

interaction' 'no dependence on online mode alone', 'honing ICT skills for real world' as justification for their choices.

The learners indicated that the F2F mode provided them opportunities to carry out 'hands on activities'. The Science students particularly liked this feature when it supplemented online offerings but what was even more interesting was that they saw a combination of f2f and online LE as conducive to their becoming independent learners.

> You don't have to attend all the classes which would sometimes be boring. Like for XX000 (course identity hidden), we have online classes as well as F2F so when having online mode students are made to be independent to solve in lab, post lab activities on their own…!! Its independent learning!! (UG-B-65)

The fact that blended was a mix of online and F2F LE made it as the most popular reason for the preference for the PG learners too. The responses included 'best of two modes', 'flexibility to use the mode convenient', 'normal human interaction', 'no dependence on online mode alone', honing ICT skills for real world' and 'catering to various age and working groups'. The duality in terms of availability of F2F and online to carry out interaction as it suits individual learners enables independent learning and enhances the whole learning experience. One learner explained that, "Considering we have internet connectivity issues, I cannot opt for online but blended. It gives us choice of F2F and online to interact depending on what situation is like." (PG-B-27)

The combination of F2F with online worked quite well for some learners as it enabled them to carry on virtual discussions with whoever was available. Comprehensiveness and immediacy were the main features appreciated by some learners while some learners indicated the challenges and fear of using technology and their own efforts to overcome this fear while enjoying the mixed mode learning now.

Theme 11: Course Structure

Online LE: The learners found the ease of accessing the course online and carrying out activities as one of the reasons for their preference. A learner stated the course structure made it, "easier to access resources and materials. As students, it becomes easy to express opinions and any query to your lecturer." (UG-O-39)
One can only speculate that these learners who have preferred this LE must have reasonably good access to ICT (most of the time), an issue that needs further exploration.

Theme 12 (Unique to PG learners in ONLINE LE only): Enjoyment

Online LE: The PG learners seemed excited to be able to use technology to learn and regarded the online LE as 'fun'. Also, because Online LE did not disturb their other activities and responsibilities, the small number of PG learners seemed very receptive about online learning. And this was voiced by one of the participant:

> Since everything these days is technology based, I would prefer to learn through tech and also it will be very easy and convenient at work place; it is user friendly for both the students and facilitator; could be easily referred back to (at later stages); fun/exciting; as informative as F2F environment. (PG-O-9)

Though it is PG learners who considered online learning as an 'enjoyment', yet it is a factor if incorporated properly could make any LE desirable.

Conclusion and Implication

There are some points of interest in preferences, especially in terms of younger learners (UG) and discipline for higher education institutions; these have considerable implications on learning environments in higher education.

1. A majority of UG learners prefer F2F whereas the PG learners' preference is divided between F2F and blended/online LE.
2. A majority of PG learners in Arts, Education & Law (FALE) and Business & Economics (FBE) prefer blended LE where as Science, Technology & Environment (FSTE) prefer F2F LE.
3. Preference is gender neutral for learners in this study.
4. The 21st century learners consider 'Time', 'convenience and flexibility', 'interaction' (of all kinds) and autonomy as important factors of a LE which in turn influences their preference for it.

The younger learners prefer F2F LE, which initially seemed a bit intriguing. However, the reasons for their preference enable us to understand what is important to the learners. The preference for blended LE by PG learners in FALE is similar to findings by Raturi, (2010) in which the PG learners in a small group localised in School of Education opted for blended LE. This implies that humanities at PG level can provide learners

satisfaction and meet their learning needs in a blended LE; it is also an affirmation of changing learners' needs in the PICs. On the other hand preference for F2F by the majority of learners implies increased ability to perform on task in F2F LE for specialised activities including laboratory and fieldwork in Sciences and honing debating skills. These were also similar to findings of other studies abroad (Alarcon Tutty & Klein, 2008; Ndahi, Chaturvedi, Akan & Pickering, 2007; Olympiou & Zacharia, 2012). However, the fact that an overwhelming majority of UG learners prefer F2F LE is indicative of how important social and perhaps even academic relationship in real time and same physical space is for these young learners; it would be worthwhile to interrogate it further. Preference for LE was gender neutral. Technology was not an issue for female learners (Raturi and Chandra, 2016) rather it was considered to be advantageous. Some considered that VLE component helped female learners with not having to 'commute during odd times'. Female learners in PICs have limitations in continuing their higher education in traditional LE and it is evident that technology supported LE provides them an opportunity to study further.

Majority of learners highlighted convenience and flexibility of the LE they prefer as one of the reasons; this was the case for each of the four LE along the elearning continuum. This is an important factor, which added to learners' satisfaction with LE (Raturi and Chandra, 2016). UG learners were able to reach out for support more easily F2F while PG learners in VLEs, and this added to their satisfaction with the LE. The important point that arises from this investigation is that learners preference was The issue of support for learners to enable their learning successfully has been pointed out as an important aspect in many studies (Bose, 2011; Thaman, 1992). Similarly, the learners' choice for a preferred LE depended on factors such as course/subject area, convenience and flexibility, access to ICT and related skills, level of intrinsic motivation and personal reasons like work-commitments and family obligations and cost of the course. Some of these factors were reported by previous similar studies (Gulati, 2008; Hogan, 2010; Hogan & Kedrayate, 2010, Raturi, 2010). Furthermore interaction of all kinds, level of autonomy and course structure influences learners' preference for their LE, which is a subject of further investigation; it highlights the need for course design to take interaction, course structure and autonomy into consideration. The cultural aspects (Nabobo-Baba, 2005; Thaman, 2002) were also seen to play a major role in determining the preferred LE and therefore, it is important that this factor is given due consideration by higher education institutions and also warrants further research.

The fact that there are a good number of mature age learners, HE providers have a responsibility to fulfill their learning needs. Thus, there is a need for further research to understand factors affecting learners' LE such that these LE are conducive to all PI learners. Though, it is clear that 'time', 'convenience and flexibility', 'interaction' (of all kinds) and autonomy is the four crucial aspects for learners regardless of their preferred LE. Thus, the higher education providers in the region of the South Pacific need to consider the LE preferences by learners at different levels and ensure to provide the Pacific learner options for different LE. This would be true to certain extent in majority of developing countries context too as well as learners from first generation immigrant and minority groups in developed countries.

In light of the fact that a number of higher education institutions around the world are beginning to embrace virtual learning environments including the MOOC providers, there are no boundaries for learners or instructors; even a student from Tuvalu (the second smallest island nation) may enroll for a course or micro-degree programme. This study should assist tertiary education providers in any part of the world to understand learners needs if they want to cater to diverse learners from around the world.

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References

Alarcon, C.M., Tutty, J.I. and Klein, J.D. (2008). Effects of Instructional Setting and Interaction Cues in Collaborative Computer-Based Instruction. *31st Annual Proccedings-Selected Research and Development Papers.* Presented at the Annual Convention of the Association for Educational Communications and Technology. 1-11, Orlando, FL.

Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. Qualitative Research in Psychology, 3 (2). pp. 77-101. http://dx.doi.org/10.1191/1478088706qp063oa

Bose, S. (2011). Tutor orientation courses for improving student retention in India. *Asian Journal of Distance Education*, The Asian Society of Open and Distance Education, 9 (2), 53 – 63. Retrieved from http://www.asianjde.org/2011v9.2.Bose.pdf

Garrison, D.R. and Anderson, T. (2003). Elearning in the 21st century a framework for research and practice. Open Universiteit Nederland. 49 – 71.

Gulati, S. (2008). Technology-enhanced learning in developing nations: A review.
International Review of Researchin Open and Distance Learning, 9 (1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/477/1011

Hogan, R. (2010). Societal Issues, Legal Standards, & International Realities Universities Face in the Distance-Learning Market. *Distance Learning Technology, Current Instruction, and the Future of Education: Applications of Today, Practices of Tomorrow. (284-301).* IGI Global, NY. SBN13: 9781615206728 EISBN13: 9781615206735

Hogan, R and Kedrayate, A. (2010). Elearning: A survival strategy for developing countries. Paper presented to the Eleventh Annual Conference of the Sir Arthur Lewis Institute of Social and Economic Studies (SALISES): *TURMOIL AND TURBULENCE IN SMALL DEVELOPING STATES: GOING BEYOND SURVIVAL*: the University of the West Indies, Republic of Trinidad and Tobago. Retrieved from http://sta.uwi.edu/conferences/09/salises/documents/R%20Hogan.pdf

Lincoln, Y.S. and Guba, E.G. (1985). *Naturalistic Inquiry*. London: Sage.

Lingam, G., Raturi, S. and Finau, K. (2015). Improving Educational Reach in Pacific Island Countries with ICT. *Education in Australia, New Zealand and the Pacific*.Bloomsbury. UK.

Moore, M.G. (1989). Editorial: Three types of interaction. *American Journal of Distance Education*, 3(2), 1-6.

Moore, M.G. (1997). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education.* Routledge. 22-38.

Nabobo-Baba, U. (2005). Vugalei: Voices and Silences of What and How we Know: Indigenous Fijian Epistemology and Implications for Education. *PhD in Education Thesis*. The University of Auckland, New Zealand.

Ndahi, H. B., Chaturvedi, S., Akan, A.O. & Pickering, J.W. (2007). Engineering Education: Web-Based Interactive Learning Resources, *technology Teacher*, 67 (3), 9-14.

Olympiou, G. and Zacharia, Z. C. (2012), Blending physical and virtual manipulatives: An effort to improve students' conceptual understanding through science laboratory experimentation. Sci. Ed., 96: 21–47. doi: 10.1002/sce.20463

Raturi, S. (2010). Learners' satisfaction of, and preference for, different instructional delivery modes: a case study from the University of the South Pacific, *Master of Education Unpublished Thesis.*

Raturi, S. and Chandra, S. (2016): Learners and Instructors' digital status and satisfaction with learning environments in Higher Education. *International Journal of Instructional Technology and Distance Learning*, pp 31-52, Vol. 13. No.5&6. ISSN 1550-6908 Retrieved from http://itdl.org/Journal/May_16/May16.pdf

Raturi, S., Hogan, R. and Thaman, K.H. (2011): Learners' Preference for Instructional Delivery Mode: A Case Study from the University of South Pacific (USP), *International Journal of Instructional Technology and Distance Learning*, 8 (6), 17-32, ISSN 1550-6908. Retrieved from http://www.itdl.org/Journal/Jun_11/index.htm

SPC Website. Retrieved from http://www.spc.int/en/about-spc/members.html

Thaman, K.H. (1992). Looking towards the source: a consideration of (cultural) context in Teacher Education. *Directions*, 14 (2), 3-13. Retrieved from http://www.directions.usp.ac.fj.cache5.usp.ac.fj:2048/collect/direct/index/assoc/D770044.dir/doc.pdf

Thaman, K.H. (2002). Culture, teaching and learning in Oceania. In *Educational Ideas from Oceania: Selected Readings.* K.H.Thaman (Ed.). (3-11). Suva: University of the South Pacific.

Vygotsky, L. (1978). Mind in Society. *The development of higher psychological process*, Cambridge, MA: Harvard University Press.

