A Boon or A Curse: E-learning and Students' Learning Preferences

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Abstract. The COVID-19 pandemic has brought about drastic changes to the ecology of teaching and learning across the globe. In Hong Kong, while classes at tertiary education institutions have been intermittently suspended, e-learning has been normalized as equivalent, if not preferable, to face-to-face instruction. It is controversial as to whether e-learning is an effective tool for teaching and learning. Concerns have arisen over the possibility that e-learning practices will be codified in the post-pandemic era. This study investigates student preferences in curriculum delivery and learning styles in tertiary education settings. Eighteen graduates at local tertiary institutions were interviewed; the data collected were transcribed and thematically analyzed. It is discovered that students prefer curricula and learning styles that emphasize *people* as the primary focus, including collaboration, communication, and interactivity. Students' preferences are compared to the contemporary state of e-learning, and recommendations to improve e-learning in tertiary education are made.

Keywords: coronavirus pandemic, COVID-19, e-learning, curriculum delivery, student social identity, learning motivation

Introduction

Since the outbreak of the coronavirus pandemic (COVID-19), the Hong Kong government has implemented strict anti-pandemic measures. All primary and secondary schools have been intermittently suspended in response to periodic outbreaks, during which students attend classes remotely while school premises are off limits. While authorities have not mandated class suspensions at higher education institutions, they have suspended classes alongside their primary and secondary counterparts.

While students could only study at home during traditional class suspension periods, e-learning has transformed from a mere tool to assist teaching to a lifeline between teachers and students. From real-time online classes to submitting assignments through online platforms, students and teachers have entered a new realm of education.

E-learning may be used interchangeably with terms like "online learning", "online classes", "distance learning" or "virtual learning" (Guri-Rosenblit, 2005; Nycz & Cohen, 2007; Sarker et al., 2019). Nonetheless, this paper uses e-learning generically to describe the teaching and learning methods which prevail during the pandemic. It is *synchronous* in the sense that online technology comprises conferencing and collaboration platforms that allow students and teachers to interact in real-time virtual classrooms; it is also *asynchronous* in that lesson content is uploaded to an Internet platform where students can download resources for self-study and submit work.

It is noteworthy that shifts to e-learning by schools during the pandemic were often unplanned and sudden (Affouneh et al., 2020; Biswas & Debnath, 2020; Chingara et al., 2021; El, 2021). Many institutions that had been reluctant to change their traditional pedagogical approach had to shift entirely to e-learning as the pandemic developed (Dhawan, 2020). The short notice to switch to e-learning, along with superficial or absent support systems have created stress and anxiety for both teaching faculty and students (Müller et al., 2021).

The pandemic has also laid bare the failure of the global higher education sector to keep pace with the latest technological and pedagogical innovations during the past decades

(Lynch, 2020; Waller et al., 2019). No one knows when the pandemic will end, or whether a new pandemic will arise, and it is also unclear when normal face-to-face classes will resume in the post pandemic era. As Felson and Adamczyk (2021) observe, decisions to resume in-person instruction are unrelated to changes in COVID-19 infection and mortality rates; institutions' politics and budget concerns play more significant roles. As Murphy (2020) adds, such "normalization of emergency e-Learning" tends to preclude any substantive debate on the value of e-learning itself.

Apart from the advancements in health, safety, and public policy, there are scholars who commend e-learning prevailing during the pandemic. For instance, Alhammadi (2021) says that the advance of technology in classrooms increases student engagement. Scholars like Sobaih et al. (2021) also believe that the usage of virtual classroom software helps students access information and learning resources, positively impacting knowledge construction, critical refection, and learning experience. Furthermore, e-learning provides learning flexibility (Alqahtani & Rajkhan, 2020) and autonomy (Yang et al., 2021) to students inasmuch as assessable learning targets still exist during the pandemic.

Notwithstanding, e-learning has invited substantial criticism for a number of reasons, and a proliferation of literature has reported that e-learning has a negative impact on student learning motivation in the higher education setting (Aguilera-Hermida, 2020; Alawamleh et al., 2020; Stark, 2019). Such negative impact was mediated by factors of psychological distress (Roman & Plopeanu, 2021), poor external supporting facilities (Gustiani, 2020), as well as decreased communication between students and teachers (Alawamleh et al., 2020). Conversely, relational factors based upon teacher-student communication are positively correlated to student learning and performance (Poon & Lau, 2017a). Apart from motivation, e-learning is cited as detrimental to curriculum delivery and access (Affouneh et al., 2020; Lynch, 2020; Qamar et al., 2021).

What seems most concerning regarding e-learning is how it divides students into privileged and unprivileged groups (Biswas & Debnath, 2020; Hasudungan & Ningsih, 2021; Laubscher & Ravyse; 2021), leading to structural inequalities in classrooms (Murphy, 2020). For students in underprivileged groups, challenges arise from inconsistent technological access, poor internet connectivity, and harsh study environments (Alsoud & Harasis, 2021). Compulsory placement of students into e-learning settings without necessary consideration of the diversity of student backgrounds inevitably results in a negative impact on both learning and performance (Poon & Lau, 2017b).

In the light of these criticisms, and given the availability of additional resources and operating experience, higher education institutions are expected to revamp e-learning courses. Specifically, it is incumbent on institutions of higher learning to innovate in the e-learning space (Mahfoodh & AlAtawi, 2020) and, concurrently, to re-evaluate the validity and reliability of knowledge and skills assessment via online platforms (Jacques et al., 2021). As e-learning may remain in use for the indeterminate future, students being the main stakeholder of higher education necessitates that their learning preferences and experiences be considered fundamental to the design and delivery of academic modules (Lau, 2014; Poon & Lau, 2014). Therefore, this paper investigates students' perspectives on learning preferences and compares them to the present circumstances of e-learning. This will shed light on potential avenues to improve e-learning during the post-pandemic era. Hence, the research questions that guide this study are:

- Research Question 1 (RQ1): What is students' preference on curriculum delivery in higher education?
- Research Question 2 (RQ2): What is students' preference on learning styles in higher education?

Methodology

Data Collection

Students' perceptions of ideal curriculum delivery and learning styles are feelings that cannot be easily, directly observed or recorded. The semi-structured interview was selected as this study's data collection method because it is considered the best way to "find out what is on people's mind—what they think or how they feel about something" (Fraenkel & Wallen, 2006, p.455). It is most effective to investigate students' learning experience by asking them to directly explain their feelings in their own words (Seidman, 2006). One-on-one, face-to face interviews were conducted because they are effective in offsetting or resolving contradictions that can arise among responses from a single participant or between responses of participants in a group interview. Atypical or unclear responses can be probed for explanations and elaborations to uncover valuable points. Also, in a face-to-face interview, participants' body movements and facial expressions can also be observed, and this can supplement a richer meaning to the interview.

Since the semi-structured interviews were conducted, interviewees were encouraged to elaborate their points as needed. Jumping between items with interviewees was quite common, and it allowed participants to clarify any problems as necessary. Interviews were usually carried out in a fashion "where a schedule is prepared but it is sufficiently open-ended to enable the contents to be re-ordered, digressions and expansions made, new avenues to be included, and further probing to be undertaken" (Cohen et al., 2000, p.146). At the end of each interview, interviewees were prompted to add any further points they wanted.

Non-probability snowball sampling was selected for this study to identify and recruit information-rich participants for the semi-structured interview (McMillan, 1996). The value of persons as sampling units, therefore, is the most valid and obvious consideration in this interview-based study (Lindlof & Taylor, 2002). Since qualitative research often faces constraints of access, time and resources, it was practical to select participants who could be particularly informative about the issues being researched (Lindlof & Taylor, 2002). Likewise, as a systematic sampling process in qualitative research designs is rarely established (Lindlof & Taylor, 2002), a purposive non-probability sampling technique was adopted, identifying interviewees according to careful pre-selected criteria (Mack et al., 2005; McMillan, 1996).

As shown in Table 1, eighteen recent graduates of local universities in Hong Kong were selected for this study with official graduation as the requisite. To protect the privacy of the interviewees, all names shown in this study are pseudonyms. These eighteen participants graduated from five different tertiary institutions in Hong Kong, of which four were UGC-funded institutions[*] and one was a self-financed tertiary institution. Because the interviews took place before the COVID-19 pandemic began, the possibility of participants' points of view being confounded by exposure to conventional e-learning was eliminated. Finally, the participants represented information-rich individuals who communicated their stories and experiences via their 'student voices' as postulated in the next section.

Table 1. Participant profiles

Participant	Pseudonym	Major
P1	Amy	Language Education
P2	Peter	Chinese and Bilingual Studies
P3	Kevin	Accountancy
P4	Carmen	English Studies and German

[*] Higher education institutions funded by the University Grants Committee of the Hong Kong SAR Government.

P5	Leesha	Language Education
P6	Andrew	Nursing
P7	Charline	Psychology
P8	Alvis	Language Education
P9	Teddy	Chinese Language and Literature
P10	Melissa	Architecture
P11	Duncan	Mass Communication and Journalism
P12	Betty	Architecture
P13	Jacob	Architecture
P14	Henry	Architecture
P15	Olivia	Public Policy Management and Politics
P16	Gordon	Language Education
P17	Patricia	Language Education
P18	Wendy	Statistics

Data Analysis

All interview data associated with students' perception were analyzed by means of qualitative analysis, which is one of the best methods for understanding the complexity of education problems (Suter, 2006). In terms of unit of analysis, Batchelor's (2008) theory of student voice offers a philosophical basis of analysis of students' perception against an educational climate dominated by market and managerial discourses (Barnett & Di Napoli, 2008). This study postulates that the *third voice*, the ontological voice, is the most delicate and vulnerable, as it has the capability and capacity to substantiate and integrate with the other two voices, the voice of knowing, and the voice of doing. It is the most relevant and important voice in identity formation, particularly when individualized student voices meld into a collective voice interacting with and combining each of their individual voices (Batchelor, 2014).

Although it would have provided clear benefits, this study did not provide preparation time for participants because, (a) the semi-structured interview was designed to solicit authentic answers, which prior preparation would negatively affect; and (b) natural anxiety during the interview could be a good device to elicit true information, instead of formulaic responses, needed for the research. While all participants were non-native English speakers, English was established as the medium of communication before the interviews took place. Interviewees generally showed no difficulties in responding to the questions asked, though clarifications were occasionally needed to prompt more in-depth reflections.

With active participation from students whose unique voices are decoded in this study, data collected were transcribed and thematically analyzed. To facilitate the management of data and meticulous data analysis, the computer software Nvivo was utilized. In specific, the key stages of coding and thematic analysis were digitized and computerized, enabling important queries to be made in a more organized, systematic, and effective fashion. This study will thus be replicable, as all digitally completed analytical procedures can be tracked and traced.

Literature Review

While "school culture" has been conceptualized and used in research in a variety of ways (Lee & Louis, 2019), Fullan (2007) describes school culture as the guiding beliefs and values intrinsic to the operation of an educational institution. Peterson and Deal (1998) suggest that school culture encompasses the "underground stream of norms, values, beliefs, traditions, and rituals" (p. 28) that influence the daily behavior of people in schools. Kalkan et al. (2020) look at school culture as an important factor that determines the perception of

the school and the behavior patterns there, especially those of teachers and students. Therefore, school culture is a collection of phenomena possessing characteristics that impact the individuals in educational organizations. How the curriculum is steered, and whether students' ideal learning styles are accommodated, for example, are distinctive aspects of school culture.

Lambert's (1973) discovery that culture exerts a profound influence on the learner's cognitive processes and affects the structure of personality. Learners' cognitive and learning styles are believed to have a significant influence on learners' choices of learning strategies (Parnrod et al., 2014; Shi, 2011). In specific, the study postulates that school culture in which students construct their social identity (Tajfel & Turner, 1979) has significant impact on student learning motivation. Desired curricular offerings, combined with preferred learning styles, comprise a unique distinctiveness that students of a given school identify themselves with. Lau's (2018) study, for instance, looks at the perceived degree of membership and its positive effect on student sense of belonging. Lau (2018) discovers that the more school culture matches students' ideal university culture, the more students' sense of belonging increases; enhanced sense of belonging subsequently contributes to student learning motivation.

The interplay of social identity theory (Tajfel & Turner, 1979), and self-categorization theory (Tajfel, Billig, Bundy, & Flament, 1971; Turner 1985; Turner et al., 1987) leads to the dynamics of homogenization and social differentiation; that is, *in-groups* and *out-groups*. In-groups refer to social groups to which a person conceptually identifies as being a member. Conversely, out-groups are social groups with which an individual does not identify. In-groups and out-groups create the mechanism of social comparison, through which individuals compare in-group members with out-group members, perceive which they belong and do not belong to, and look for motivators and benefits within the in-group to enhance self-esteem.

The formation of students' social identity occurs in higher education, when, in a given school culture, a particular student manifests on a level beyond their personal identities. The student begins to transform from an individual into a member of the student group, among other memberships in sociocultural and educational categories, thereby enabling the student to perceive, associate, and internalize any necessary aspects of the construction and substantiation of their memberships. The student's emotional engagement to membership in a student group formulates the prescribed emotional components associated with that group. As the student anticipates membership in the group, they continue to develop and reinforce their interests accordingly. That is, the sociocultural and educational context embeds a cultural distinctiveness consistent with the ontological characteristics of the student as an individual. In this light, the individual's cultural ideals conflate with their socio-educational context, reinforcing the student's social identity.

Tajfel and Turner (1979) further identify 3 variables affecting the consolidation of membership:

- how closely people identify with an in-group and internalize that group membership in establishing their self-concept;
- how closely the prevailing context provides the conditions for comparison between groups; and
- how relevant or meaningful the comparison group being perceived is, itself shaped by the in-group in a relative or absolute sense.

Within the school culture of a higher education institution, students use verbal and/or non-verbal cues to make the group they belong to more socially valued, thereby creating an increasingly positive meaning and distinctiveness to their social identity. Students are homogenized through the making and assigning of similar characteristics and attitudes to members of each group, making them uniform in composition and characteristics.

Furthermore, they accredit additional favorable and approving characteristics to the group that has been identified as *us* as opposed to members of other groups identified as *them*. This leads to a necessary outcome of *in-group favoritism*, which in turn generates intergroup discrimination (e.g., us vs. them).

More studies reveal that students' social identities can influence their learning behavior: Dean and Jolly (2012) suggest that the learning process is related to social identity in that learning is a fundamental process of recognizing and adapting one's different identities. There are reports that the interplay of social identity and student self-efficacy enhances student commitment to learning (Smith and Woodworth, 2012), and willingness to continue the schooling process (Bornholt, 2001; Bornholt et al., 2009). Bizumic et al. (2009) establish that a school climate is significantly correlated with students' well-being and their identification with the school, concluding that "social identification is central in explaining individual functioning … social identity processes need to be considered in explaining individual functioning in schools" (p. 188-189). Finally, Bliuc et al. (2011) studied the relationship between social identity and student learning behavior and their academic performance in higher education and concluded that student social identity tends to be associated with academic achievement, and student deep learning approach (learning associated with a deep sense of personal satisfaction and consistent, relevant, and related commitment) mediates student social identity and high academic achievement.

Findings

Regarding research question 1 (RQ1), we were interested to survey under what environment, atmosphere or vibe had participants felt learning should take place. In other words, participants were asked to describe their anticipated direction through which the curriculum was to be steered. Two critical phenomena were discovered about what steered the provision of curriculum: (a) *Freedom-steered learning*, and (b) *Real world-and people-steered learning*.

Participants described the following characteristics which defined *freedom-steered learning*: First, free choices and flexibility in practicing and developing the learned knowledge and skills, which cater to broader learning interests; in other words, not overemphasizing examinations, results, or GPA. P1 said, "[My institution should] provide different types of knowledge and not just education like my major degree ... not only focus on the examination and does not only focus on GPA", so that broader learning interests are taken into consideration instead of merely restricting one's major study. Second, a free atmosphere of creations based on the learnt knowledge and skills along with a platform on which to practice what one has learned, which was described by P14 as such: "they [the school] just give you a platform to try practice what you have learned under the guidelines ... you just have some references ... they guide you as a start". Finally, participants also mentioned that having the flexibility for class attendance in terms of time and schedule was also highly preferred.

These characteristics are compatible with the findings of Crisp et al. (2009), that greater independence and more experience of freedom are conditions highly preferred by university students. The phenomenon that learning is steered by learners taking charge of their own learning is noted in Kolb and Kolb's (2005) study. Learners' autonomy fosters a customized educational experience for college students (Staley, 2014), whereas flexibility in schedules and models of delivery can enhance the university program (Greenlee et al., 2009).

Regarding real world and people-steered learning, participants shared a keen preference for the opportunity to interact with people and the world. For example, P18 enjoyed having a "collaborative learning experience" with other students during the learning process, as it "benefits me a lot about the technique of how to deal with different people". P5 added that

this process meant that one would value the opportunity to exchange ideas with classmates from different backgrounds in a professional manner. This compares to Hughes et al. (2010) that college students are primarily motivated by forming ongoing relationships with their peers. In addition, participants reflected that such interactions would not be restricted only to classmates but real people in the real world. This is consistent with Noel-Levitz's (2012) recommendation that college students find learning more meaningful when they can collaborate with others in solving problems or mastering difficult materials. As P2 expressed, it would be a great opportunity to build connections with real people in society. P2 supplemented, "connection is of paramount importance in my life because without connection even though how well or how beautiful my résumé is, without connection I cannot find any job as well". P3 further mentioned that a university should give students a "world-wide quality to see the world" associated with a learning approach not provincial in scope to broaden their horizons. This coincides with the increasing trend of universities to provide students with opportunities to engage in global learning experiences (GLE) as part of their study program; students are shown to have clear expectations for engaged, faculty-facilitated and safe learning experiences in global settings (Salyers at al., 2015).

While these two phenomena ideally steered the provision of higher education, there was one exceptional case, P6, who articulated that it did not matter how education was channeled by the school or how it would be navigated. According to P6, what mattered more was the people responsible for the delivery of the education. Specifically, that such people should cultivate a hospitable and friendly feeling for students to experience. This coincides with Poon and Lau's (2020) study that being approachable/personable is one of the behavioral traits where lecturers are considered excellent by students.

Regarding research question 2 (RQ2), participants would select a particular learning style which had best facilitated and enhanced their learning. These distinctive learning styles described by each participant have been classified into three domains as represented in Figure 1 below:

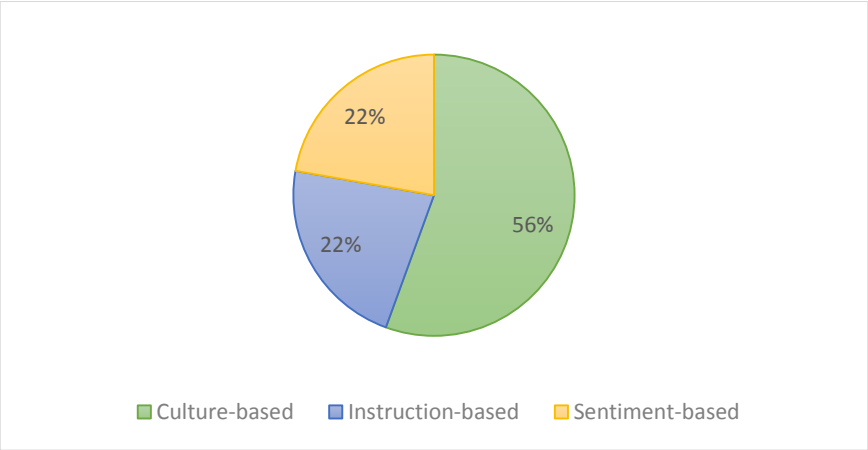

Figure 1. Distribution of preference for learning styles

The largest domain, *culture-based*, refers to the phenomenon when the learning culture acts as an essential ingredient for effective learning. Specifically, 10 out of 18 (56%) participants thought that the environment and the people involved with the learner played the most important roles in learning. Key concepts associated with this phenomenon include: Opportunities to apply knowledge, live feedback, diverse communication channels, peer interaction, peer observation, role play, collaborative learning, collaborative problem-solving, foreign learning experience, and observation of the outside world. The learning experiences shared by P15 and P16 help illustrate the nature of the culture-based learning style:

> I was having an exchange in the United States and one of the courses is given by a member of a think tank in the U.S. … he didn't provide any PowerPoint slides or notes to the students. … Just simply asked you to buy two books and you read it and then he will discuss the topic with you by debate or group discussion … and then present yourselves … instead of to just simply free spoon-fed education style … [it's 'cool' to have] very new kind of cultural shock (P15).

> We're sitting in groups, so you would have to discuss something in groups … each groups have different things to discuss. You're given a number and then number ones go to one table, and number twos go to one table, and so the whole table is mixed now. So, for example, if there are thirty students around, and then by getting up out of your seat, you're meeting new people who are not usually in your group. And you're sharing ideas again, so that's really motivating I think because it motivates you to listen in your original group and then to verbally share with a completely new group (P16).

Regarding the *instruction-based* learning style, 4 out of 18 participants thought that effective learning was dependent on the pedagogy by which instructions, teaching materials and feedback framed the teacher-student communications. This coincides with Paolini's (2015) finding that effective teaching relates to the explicit and engaging instruction of teachers. Key concepts associated with this phenomenon include: Active engagement, inspirational teaching, interactive teaching, provocative instruction, clear learning objectives, learning resources, and traditional learning modes. The learning experiences shared by P8 and P10 illustrate the nature of the instruction-based learning style:

> One of my professors … she always interact[s] with us … we didn't do many group works in her lesson but then she always keep[s] talking and asking questions. So instead of only talking she asks us questions and interacts with us. So I think it's quite good (P8).

> I have to get ready for my presentation twice a week … Out of sudden the professor will pick you so that everything is just in a rush … You don't really have time to prepare your stuff but you have to make up the things that you have to tell people and convince them my project is awesome … that builds up your confidence, despite stress and harsh criticism from professor (P10).

Concerning the *sentiment-based* learning style, 4 out of 18 participants thought that effective learning was achieved by the formation and cultivation of strong feelings and reactions towards a subject, whether through experience or new encounters. This type of learning style could ensue from acquaintances of peers and other people or the learning environment, are dependent on both sentiment and the student's own personality as the main motive of learning. This can be explained by the argument that passion and perseverance may help students persist in the face of adversity (Hochanadel & Finamore, 2015). It also confirms the study of Sadeghi et al. (2012) showing that personality may help a learner resort to different learning styles or preferences, affecting learning performance. Key concepts associated with this phenomenon include: "heart", genuine feelings, validation of effort, internalization of experience, discovery of meaning, care-free and pleasant learning, and an un-distracted learning moment. The learning experience shared by P11 illustrates the nature of the sentiment-based learning style:

> [During a drama performance/presentation] my friend and I were very sick … it is winter … our voices were like shit. But we need to use our voice, and then to a point during the performance my friend cried. But it's part of the scene and then but she really cried and then I was freaked out … that's a very touching moment. … I saw some of the audience which were our classmates and then they cried. … Our performance may not be the best which the score can show, but that performance was truly memorable [because] you give everything (P11).

Conclusions and Discussion

As a full-time teacher at a tertiary education institute in Hong Kong, I acceded to online teaching during the recurring class suspensions due to COVID-19. I remember when classes were first suspended in 2020; it was on very short notice. Students were asked to stay home; teachers jumped into online teaching immediately. No instructions or clarifications from school management were provided as to how online lessons were to be conducted, what materials were to be used, and most importantly, how online classes provide equivalent value to normal classes; thus, online classes began as ill-defined reflections of traditional curricula**.**

Given that many teachers had not been trained in using conference software, and there were simply no relevant e-learning materials available, teachers had to individually assemble materials deemed useful for students' learning. At the same time, "assessment" was furtively redefined as "online assignment submission". As such, there was a substantial time period where online classes only involved uploading and displaying random materials like videos, PowerPoint slides, handwritten notes, or instructional voice overs, often uploaded via Moodle or social media platforms. An entire semester passed by under such nebulous circumstances, after which students were proclaimed to have met all course objectives and requirements to advance. As getting a passing grade in a course became much easier, students could use these results for further academic purposes or employment.

This haphazard phase of e-learning lingered for some time until school management suddenly decided to "standardize" e-learning with new measures. New policies included having all classes conducted through Microsoft Teams, while attendance requirements were put in place again after several previous reversals. Teachers were asked to teach all online classes under a normal face-to-face schedule as follows: Broadcasting some 20 hours per week on camera, with headphones and a microphone facing the computer screen; unable to see students because they did not have to show their faces (due to privacy concerns); and speaking to an empty classroom when teachers were summoned back onto campus while students were denied entry. Finally, all assessments remained as online assignments.

Under the current commercialization of higher education, it has become more prevalent and obvious to see how academic managerialism legitimizes the commodification of students' educational experience and student–teacher relationships. Into the complex and delicate ecology of higher education and the wide diversity of student expectations, heavy-handed educational policies, such as the premature normalization of e-learning, are implemented when they are taken for granted without even the slightest consideration to whether they are appropriate or effective. As such cultural shifts evolve in higher education, policies and budget are what seem to truly valued. The equivocally phrased 'grand education goals' are certainly designed for marketing appeal, yet they can only be accomplished when the vulnerable entities compromise to the paradox of academic vigilance and customer satisfaction. Students' voices are habitually neglected and muted, likewise those of teachers; whether their identities can even remain ontologically valid will depend on the degree to which the societal value of quality education is respected.

As narrated by students, an ideal learning environment which optimizes the delivery of curriculum has the following characteristics:

- Free creative atmosphere
- Flexible class attendance policies
- Collaborative learning experiences
- Free choices and flexibility in practice and development
- Multiculturalism; learning with classmates from different backgrounds

Likewise narrated by students, these factors are found in many students' learning styles:

- Ideal learning culture
- Plenty of collaborations
- Robust learning environments
- Opportunities to apply knowledge
- Effective teacher-student communication
- Keen interest and curiosity about the subject

Given e-learning during the pandemic has manifested as a confined pedagogical space whereby a wide array of face-to-face learning activities have been suspended, it is salient for institutions to rectify this and consider increasing the scope of educational offerings during the post-pandemic period. As the pandemic subsides, and it becomes feasible for schools to conduct more face-to-face activities, schools must be willing and ready to allow students to partake in real-life learning opportunities once again.

If collaboration and real-world interactions play important roles in students' learning experience, even if e-learning were to be normalized, institutions must allow some portions of the curriculum to include a physical practicum in which student performance is evaluated. There may well be budget or policy arguments against it, but opening up school venues and arranging in-person teacher-student consultation sessions are crucial to educational quality. The allocation of time specifically required for physical practicum must cater to the needs of students with regards to demonstrating knowledge, leading to satisfactory performance and accurate assessment.

As revealed by the findings of this study, culture, sentiment, and instruction serve as the tripod of students' preferred learning styles. To improve e-learning, a thorough survey cum consultation of how curriculum should be delivered with respect to this tripod must be carried out such that the expectations and needs of students, teaching faculty, and school administration are balanced. For example, teaching and learning materials must be overhauled to ensure that communication channels maximize user-friendliness and allow for constructive learning feedback.

Referring to the preferred learning styles of students, it is understood that that the environment and the people in it involved play important roles. However, e-learning inhibits the development of such a humanistic environment. Therefore, it is vital for schools to acknowledge the necessity of arranging real-life learning activities by demonstrating consistent practical and managerial support for them. As described above, teacher-student communication, as framed by pedagogy, teaching materials, and feedback, acts as an important factor in students' learning style. Institutions should therefore empower teachers to be innovative and creative in online educational spaces.

Even though helping students to cultivate strong feelings about and reactions to a subject is challenging for teachers under e-learning, I believe that more innovative ways of teaching under a validated framework, like communicating via social media, or putting together visually spectacular online videos—with the encouragement of school administrations and practical support from schools' IT departments—would make far more sense than continuing to expect quality educational outcomes from students spending hours and hours in untested, uncoordinated curricula. How e-learning can be standardized into an

effective, engaging, and sustainable form is an urgent question for educators and policymakers to consider.

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