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A comparison of the behaviors of in-person and online students and teachers in blended collaborative learning

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ABSTRACT- The blended collaborative learning and teaching strategy is gaining popularity in higher education, although its effects on students and teachers aren't well understood. Few studies have contextualized the learning and teaching impacts of this strategy. This paper presents a qualitative analysis of educating online and face-to-face students in a university-wide entrepreneurship course. It aims to improve understanding of ICT's influence on students' learning and teachers' instruction in three dimensions: instructional, social, and learning. This study promotes integrated collaborative teaching and learning for quality education. This study found that blended collaborative synchronous teaching had distinct educating and learning impacts, that blended collaborative communication had unexpected interactions, and that face-to-face and online students achieved comparable learning results. Higher education institutions that embrace and execute blended collaborative learning must support professors and students in instructional, social, and learning dimensions.

Keywords:
Collaborativelearning,blendedlearning,Onlinelearning,face-to-facelearning,teacher'sexperiences

I. INTRODUCTION

Blended collaborative learning and teaching strategies are growing in higher education. Many teachers believe that when this type of learning is implemented, it can involve online students in suitable learning with campus students, broadening information sharing and student participation. Few studies (Szeto, 2014; Nicolau, 2015; Szeto and Cheng, 2016; Wang et al., 2017) of this strategy have shown positive results, but further study is needed to better understand its effects on online and face-to-face students' learning and instructors' teaching. Few would dispute the classroom's importance for formal learning (Tomlinson, 2014; Brookfield, 2015). Some students must miss face-to-face instruction, though. Some individuals may not be able to attend face-to-face classes due to work and family obligations (Ursin et al., 2016). Students may miss class due to illness or bad weather (White et al., 2010). Physically disabled children may never have equal class attendance possibilities (Bruce and Sundin, 2012). It's crucial to establish technology-enabled learning environments that allow students to attend class remotely. This research examines how technology-enabled learning settings effect teachers and students. Blended collaborative learning had these effects. How does this affect learning outcomes? This study's results will inform ICT-based teaching and learning techniques.

II. LITERATURE REVIEW

An growth in technology-enabled learning and teaching has created new opportunities for online and face-to-face higher education students (Simonson et al., 2014; Anderson, 2016; Thai et al., 2017). Similar studies have evaluated the effectiveness of online and face-to-face learning (Summers et al., 2005; Ni, 2013; Moon et al., 2014; Xu and Jaggars, 2014) and students' satisfaction and learning attainment (Means et al., 2013; Chang et al., 2014; Auster, 2016). There are no complete, accurate results available to college administrators, teachers, or students.Face-to-face and online instruction are not incompatible in universities. By integrating these two techniques, students can benefit from improved teaching and timely interactions (Szeto, 2014; Jacob et al., 2016; Harris, 2017), while teachers can explore imaginative

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teaching for the advancement of technology-enabled learning (Kale and Goh, 2014; Ata, 2016). The instructional and technological impacts of blended collaborative learning and teaching are as disputable as those of the total online and face-to-face approaches. Blended collaborative learning encounters were ignored. Instructional and learning effects of simultaneously mixing online and face-to-face techniquesmissed course. (Garrison et al., 2001) presented the Community of Inquiry (CoI) paradigm for online teaching and learning.

Table1:TheCodingtemplateforthe3dimensionsAdapted from(Garrisonetal.,2001)

DIMENSION	CATEGORY
Instructional	(1) Instructional management; (2) Building understanding;and(3)Direct instruction
Communicative	(1)Emotionalexpression;(2)Opencommunication; and(3) Groupcohesion
Learning	(1) Triggering events; (2) Exploration; (3) Integration;and(4)Resolution

III. METHODOLOGY

This study reports the first phase of a largerstudy ina blended collaborative learning mode. Forty six firstyearstudentsenrolledinanintensiveentrepreneurshipdevelopmentstudiescourse.Thiscourse is compulsory for all first year students of theinstitution since it is a university compulsory widecourse. This students were randomly divided into anonline group, Team 2 (TM2, n = 23), and a face-to-face group, Team 1 (TM1, n = 23). The teacher wasresponsibleforteaching4hoursperweekfor11weeks, with a total of 44 hours. The (Hastie et al.,2010)blendedsynchronouslearningmodelwasadopted,theteachertaughttheface-to-facegroupin the lab at the entrepreneurship development studiescentreoftheinstitution,whiletheonlinegroupconcurrently attended the same sessions at a remotelocationwiththeuseofInternet-basedvideoconferencing.Thisstudy adoptedagroundedtheory approach (Corbin and Strauss, 1990; Straussand Corbin, 1997; Charmaz, 2011) in gathering andexaminingthedata.TheCOIcodingstructure(Garrison et al., 2001; Garrison and Arbaugh, 2007;Garrison, 2011) was used as a preconceived codingscheme forthe analysisof the datacollected(seeTable 1).Then,the reliability of the analysiswasimproved through a cross-checking, comparing andauditingprocessbyanotherqualitativeresearcherinvolvedinthestudy(Nadeemetal.,2013).

IV. FINDINGS

INSTRUCTIONALDIMENSION	TEAM1	-Thepresentationwasexceptionallycomprehensiveatastablepace. -Deliberatelyreduced thespeed ofinstructingthestudents. -Thiswasexceptionallookedatwithwhatthey hadencounteredinordinaryclassinstructing. -Thetopicwasoutstandinglyindistinct. -Charredrecurrencemightmaketheinstructingalittleunusual
	TEAM2	-Apositiveviewoftheblendedcollaborativesynchronousonlineinstruction. -Teachingwasextremelydetailed Demonstrationwasdecentsincetheskillprocedureswereshownonabigscreen. -Intentionallyrecurredstepsforskillsdemonstrationimprovedclarity. -Theinstructingapproachseemedbetterthanface-to-face.

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	TEACHER'SEXPERIENCE	-DiverseattentionwaspaidtotheTM2students -TheTM1appearedtobea'controlgroup'inan experiment. - Encouragedinquiriesandrecognizedthestudents'understandingsofthe subject. - TM2couldcompletelygetahandleonthesubjectwhileTM1didnotfeelex hausted. -Thespeedofinstructingwasadjustedforclarity. -Replicationwas moreimperativetoTM2. -Experiencedtheinstructionaldifferenceandchallenges. -Teachingwas amusinginthisapproach

LEARNINGDIMENSION	TEAM 1	-Inthecauseofthese exercises,entrepreneurshipskillsweregained. - Thetechnologydeployedmustbeconsistentandthetechnicalissuesmustbe veryminimalsoastobeabletoattaintheexpectedlearningoutcomes. - Answerstotheteacher'sorTM2students'questionsisabletoinspiretheshar ingofknowledge
	TEAM 2	-Homeworkscould beeasilycompleted. -Entrepreneurialskillswereadapted moreeasilyand faster. -Adequate learning together with TM1 in teams was enabledina virtual face-to-facelearningenvironment. - Requiredliverehearsaloftheknowledgethatwasgainedtogetherwiththete acher.
	TEACHER'SEXPERIENC E	-More motivation of the team'scommunicativeinteractionswereneeded. -Thestudents wereattimes disconnected. - Thestudentswereimpulsivewheninvolvinginthelearningexercisesofthet eam. - Theoutcomeofthetasksandtestsreallydidnotdisplaynotablevariancebet weentheTM1 and TM2 students.

COMMUNICATIVE/SOCIALDIMENSI ON	TEAM 1	-It lookslikeheyarebeingabandoned bytheteacher. - ThesocialinteractionwithstudentsofTM2waschall enging since the TM2 students were not presentfaceto face. - TheteacherspentmuchmoretimewiththeTM2stude ntsin thequestion andanswersessions. - Theaudiotransmissionwasn'tsteadywhencommun icating. - TheyareactuallyInterestedinmeetingtheotherstude ntsthatareat theremotesite.

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	TEAM 2	-Experiencedshorttransactional InteractionswithTM1forcrossgroupactivities. -Therewassomuch attention on thembytheteacher. - CollaborativeactivitieswithTM1werenotdirectinth eenvironment. -Therewere a number of interruptions in the transmissionwhichcausedthesystemtoberestarteds everaltimes.
	TEACHER'SEXPERIENCE	-Theuseoflanguagewasoccasionallyadjusted. - TheuseofhandgesturesforstudentsofTM2wasintro ducedtoaid theirresponses. - Theteachermadesurethatherperformanceonthetea chingwasastangibleaspossibleon thescreen. - Theuseoffacialexpressionsandothersocialinteracti onsignswereclearlyutilized. -Theteachermadesomucheffortstoenhanceinter-teamcommunication

Theoutcomedemonstratesthedifferencesint helearning and teaching impacts on the experiences ofthe online and face-to face students and the teacher.Table 2 shows the relative outcomes between the twoteams.Thetableshowsthatthetwogroupsofstudent shaddiverseencountersandexperienceswhich is connected to the teacher's performance inthe blended collaborative situation. The teacher facedtheteachingdifficultiesofdrawingtheonlinelear ning and face-to-face teaching as a whole, whiletheblendedcollaborativeinteractivepatternwas categorizedintheblendedsynchronouscommunicatio nbetweenthetwoteams.

V. DISCUSSIONS AND CONCLUSIONS

Intheresultsdisplayedabove,thelearningand teaching impacts varies from the results of currentresearches(Hastieetal.,2010)intheabovement ioneddimensions.

Unforeseenformofinteraction

The synchronous interactions between the two teamsought to be carried out in the virtual environment.However,aninteractionsequenceoccurr edintheblendedsynchronouscommunicationbetween theonline/face-to-facestudentsandtheteacher.Immediateface-to-faceinteractionsweresoughtwithintheteamfirstbythe TM2students,butimmediate support from the teacher was more soughtafterbytheTM1students.TheTM2studentsacti vely participated in the interaction with the TM1students which was more than the TM1 students inthis mode. Nevertheless, through the pattern, it showsthat the two teams did not learn in such crossgroupinteractions. Instead, they sought for sustenance fromwithintheirownteamswhenchallengesareexperi enced. Yuan et al., (2014) argued that onlineinteractionscouldprovidepeersupportforbetter learning. However, for the two groups, the instructorwasstilltheprimarysourceoflearning.

Instructional Variance

Theinstructionaloutcomewasconvertedfromeitheronlineteaching oracombinationofthetwomodes indifferentsessionsofacoursetoablendedsynchronou scollaborativelearningsituation.Theteacher inclined to focus on the online students, whilehisinstructionalstrategyemphasizedaslowspee d,simplicityandrepeatedprobing.Theexplanationswe re clear and the topics were well understood by theTM2students.Incomparison, the TM1 students gotboredatapointintimebecausetheteachergavemore time and attention to the TM2 online students.As a matteroffact, the teacher made so mucheffortto synchronously bring his teaching across to the twoteamsinavirtuallearningenvironmentmediatedby the videoconference. This is the challenge the teacherfacedintheblendedsynchronous situation.

Related learningachievementoftheonline andface-to-facestudents

Regardlessofthepuzzlingblendedsynchronousinstruction and unexpected form of interaction,

theproposedlearningoutcomeswereachieved.Thegeneral assessment of student's learning shows thattheface-to-faceandonlineteamsattainedacomparable level of accomplishment in the learningprocess. Both team students are able to benefit from abetter instruction (Ronfeldt et al., 2015; Shaffer et al.,2014).Hence,theserelatedoutcomesareofimportanceformorestudy.

However,thisisastudyofimportanceinthatitprovideshigherinstitution,teachersandstudentswithanimproved knowledgeoftheblendedsynchronouslearningandimpactsofteaching.Inreality,arobustsupportsystemfortheblendedcollaborative synchronous learning and teaching intheinstructional,communicativeandlearningdimensions is highly needed. As a matter of fact, thisresearch offers a trivial pace forward in seeking abroadercommunity of participationof student andsharingofknowledgewhichincludesInformationcommunicationtechnology.

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