

Offline Strangers, Online Friends: Bridging Classroom Gender Segregation with WhatsApp

Preeti Mudliar

Xerox Research Centre, India

preeti.mudliar@xerox.com

Nimmi Rangaswamy

Xerox Research Centre, India

nimmi.rangaswamy@xerox.com

Prestige Technology Park – II
Etamin - 3, 4th Floor, Wing - A
Marathahalli-Sarjapur ORR
Bangalore – 560103

ABSTRACT

Mobile Instant Messaging (MIM) apps such as WhatsApp are heralding new communication behaviors amongst students in peri-urban India. From an ethnographic study of a co-ed engineering college, we describe and analyze the role of WhatsApp in both engendering and balancing the ripples caused by cross gender communication. Through in-depth interviews and immersive participant observations in both physical as well as digital spaces, we show how WhatsApp emerges as the backbone of student interactions in a gender segregated academic environment. In analyzing social conditions and identifying structural features of WhatsApp that led to its bottoms up appropriation, our study presents possibilities for educators and designers aiming to create technology enabled collaborative spaces between people otherwise hemmed in by social norms from reaching out to one another.

Author Keywords

Mobile Instant Messaging, WhatsApp, Indian Youth, Cross Gender Communication

ACM Classification Keywords

H.1.2 [Human Factors]

INTRODUCTION

Student life in a restrictive gender-dissociative environment can be full of intrigue. While social norms divide girls and boys into separate spaces in the classroom and render taboo any cross-gender interaction that is not strictly necessary, instant messages from mobile phone apps often vault over, slide under, percolate, and infiltrate through the restrictions - even as they allow surface appearances of conformity to remain mostly unthreatened and undisturbed. More crucially, these messages bind the classroom into a cohesive singular

unit – at least in the digital space. As a communication tool embedded in the opposing dualities of the private and the public characteristic of a mobile phone, Mobile Instant Messaging (MIM) services such as WhatsApp allow students to cross over the social wires that fence their interactions into largely homosocial territories. In their research on the adoption of instant messaging (IM) by teens, Grinter and Palen [8] suggest that the choice of technology as a means of communication depends on a number of non-technological factors and propose that technology be studied as a feature of the very culture in which it is being used. We look at WhatsApp as a site that acts as a surreptitious agent of change by students to co-create and structure their peer interactions with the opposite sex through both personal as well as group messaging efforts.

Our discovery of the importance of WhatsApp in regulating student interactions with the opposite sex was incidental and not part of a deliberate research plan. A semester-long study that sought to understand student life and the learning choices they make in an engineering college in the peri-urban outskirts of Bengaluru city, yielded serendipitously the role of WhatsApp in initiating friendship, developing assurances, and supporting the maintenance of these relationships as integral to student life. After establishing the crucial role the MIM was playing in facilitating communication amongst students, we delved deeper into examining WhatsApp enabled communication.

We were guided by the following questions in our investigation: 1. Why did students turn to WhatsApp in bridging gender interactions? 2. How does this digital channel encourage students to nudge cultural boundaries to form and maintain cross gender friendships? 3. What is the kind of communication enacted on WhatsApp groups that allows for gender boundaries to be bridged?

Our research suggests that WhatsApp creates a low-risk environment to facilitate new cross-gender interactions while simultaneously reflecting and affirming accepted norms governing gender behaviors. We discuss how rapid student migration to WhatsApp complemented by the app's affordances, propelled tentative cross-gender digital exchanges that soon grew into full-fledged conversations.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from Permissions@acm.org.

CHI 2015, April 18 – 23, 2015, Seoul, Republic of Korea.

Copyright 2015 ACM 978-1-4503-3145-6/15/04...\$15.00.

<http://dx.doi.org/10.1145/2702123.2702533>

Interestingly, these conversations were seldom replicated in the offline world even when students had been co-present in the same classroom for over two years. We then illustrate the enactment of group communication on WhatsApp to explain how the technology is used to order online student relations in an offline gender segregated classroom.

India is no stranger to mobile messaging. It is one of the earliest adopters of SMSs and is familiar with group SMS culture [15]. Due to the value proposition of SMS, literate people have been more connected with texting as compared to phone calls. Hence, WhatsApp's increasing adoption seems in line with user skills and comfort already developed with SMS as an affordable communication channel. WhatsApp is by no means a unique application and competes with other MIMs such as WeChat, Viber, Telegram, and Hike that offer similar features. Although the participants in our study were aware of other MIMs and were even present on some of them, they stated a clear preference for WhatsApp owing to its popularity amongst their friends. A study of WhatsApp users, [4] found that while economic considerations made WhatsApp a very attractive proposition, it was the social influence from friends that spurred user adoption. Our study too found a similar adoption pattern. We found social influence driving WhatsApp adoption so strong that one of our respondents was accessing WhatsApp on a shared family laptop by installing Bluestacks (an app player that enables Android apps to run on Windows and Mac laptops) because she could not afford a smartphone!

RELATED LITERATURE

WhatsApp describes itself as "Simple. Personal. Real Time Messaging." [10]. As a cross-platform MIM app, it facilitates 'free' exchange of messages by drawing from the user's existing mobile Internet plan. Its features support exchange of text, audio, and video messages. It also allows users to see each other's presence on the app through 'timestamp' information that reveals when a user was 'last seen' on the app. However, in recent privacy changes, WhatsApp allows users to restrict access to information such as the last seen timestamp, and their profile picture. The app hit headlines in February 2014 when it was acquired by Facebook in a US\$19 billion deal. Academic papers on WhatsApp are trickling in and taking cues from O'Hara et al [13] and the exploration of 'faithfulness' in friendship, we turn the spotlight on changing gender interactions made possible through WhatsApp as a channel of communication.

Youth and Text Messaging

The relationship that young people share with their mobile phones and the messaging practices that they engage with have allowed researchers to comment on various aspects of this phenomenon. Viewing text messaging as a social practice that is symbolic to the rituals of gift exchange, Taylor and Harper [18] demonstrated the ways in which teens enacted friendships and rivalries with one another. Further insights on the text messaging were provided by Grinter and Eldridge [9] on the nature and purposes of

everyday conversations that teens carried via text messaging that comprised 'chatting', 'coordinating communications', and 'planning activities'. Studying IM practices amongst teens, Grinter and Palen [8] attempted to locate what drew teenagers to IM, their collaborative use, and the nature of its embeddedness in their domestic routines. Ito's work [11] on Japanese youth's relationship with their mobile phones provides insightful data on the way young people use mobile phones depending on the power dynamics of the spaces that they are in. More recently, Ames [2] described the ways in which Stanford students engaged with social expectations and exhibited techno-resistance to expectations of mobile multitasking with respect to their phone use.

While these studies provide a wealth of insights, research in developed countries takes for granted the availability and functionality of seamless, perpetual and functional ICT infrastructures to understand communication behaviors and practices amongst their participants. Thus, Walton, et al [19] provide a welcome contribution with their examination of phone and mobile media sharing relationships between youth in a low income settlement in Cape Town. Given that there is very little by way of scholarly literature on digital media and youth behaviors from the developing world and especially India, we turn to broader sociological work to contextualize our primary data and analysis.

Friendships amongst Indian Youth

It is no gainsaying to suggest powerful cultural socialization asserting a major influence on what are considered to be 'correct' gender interactions among young person living in India [14]. Studies examining the posturing that accompanies friendships and masculinities in south India comment on the aggressive socio-sexual posturing in public life [16] and how inter-generational changes in are dealt through friendship in providing a space for the negotiation of cultural hierarchies, both old and new [12]. Heterosocial interactions amongst Indian youth are often formed and conducted under a cloud of cautiousness. While the boys are often privy to more liberal norms of conduct, girls bear the brunt of safeguarding the 'family honor' by ensuring that they are never publicly seen interacting with boys outside of their families beyond what is strictly necessary. Thus, not only does gender socialization proceed in ways that constrain female sexuality [5,7], but more pertinent to our study it is also facilitated by societal institutions such as educational institutes that seek to control female sexuality [3]. We found similar perpetuations of gender socialization in our fieldwork through practices such as gender segregated seating in classrooms.

Digital channels of communication create and organize a set of "possibilities and interdictions" [6] that are leveraged for sociability in culture specific ways. What interests us is how the digitally smart applications and messaging technologies offer a means to communicate and to create content. Messaging technology becomes part of the palette of meaning and content production that may push conventional

relationships to be experienced differently WhatsApp then is a "...site of encounter where friends perform and experience small but frequent acts of commitment and faithfulness... in essence, part of the way they live and dwell together even when apart..." [13]

How then does WhatsApp fit in a milieu of new and emerging interplay of low digital infrastructures and cross-gender cultural interactions?

METHODOLOGY

We conducted a semester-long qualitative study that included observations and interviews at an engineering college - anonymized as School of Information Technology (SOIT), to understand the teaching and learning context of engineering students and their daily college life. Below, we describe the field and detail our methodological approach.

Field Site

SOIT, a private institution is affiliated with a major state public university. It offers engineering courses in six disciplines and enrolls about 1500 students every year. Founded in 2008, SOIT is a very new institution and is located on the outskirts of Bengaluru. Though a part of Bengaluru city limits, the college is located in a small town that is witnessing sudden rise in real estate prices as a result of the city's rapid expansion. The town is linked to major state highways and its accessibility makes it an attractive choice for students from Bengaluru and surrounding towns. In terms of academic reputation, SOIT is not a premier institution. However, its students value the quality of teaching at the institute due to the reputation of the institute's senior professors who were earlier affiliated with a prestigious local engineering college.

Following the pattern of engineering education in most Indian states, students at SOIT too gained admission to the college on the basis of their performance in an annual common entrance test. Students said that their low ranking on the test meant that SOIT was one of the places where they could hope to be admitted. Students from outside Bengaluru, especially those living in the girls' on campus dormitories had a rather interesting basis for choosing SOIT. Most of these girls belonged to two small towns in Karnataka state and were drawn to the institution because a couple of SOIT's professors hailed from these towns. The girls revealed that their parents felt safe sending them to SOIT due to the professors' affiliation to their respective hometowns. Some girls also mentioned that their parents insisted they share a room with girls from their own hometowns with whom their families already had longstanding relations. Thus overall, SOIT has a mixed social milieu of students belonging to cosmopolitan Bengaluru city and students from nearby urban and rural towns as well as small towns from neighboring states of Karnataka.

Data Collection

The fieldwork was primarily conducted by the first author. She was introduced to students by professors as a researcher

from a corporate research lab, interested in learning about engineering student life through observations and interviews. The first author built rapport with students by inviting questions about herself and her research agenda. Her prior experience as a journalist in India and her student days pursuing a PhD in America generated curiosity. She was approximately 10 years older to students and leveraged her previous experience in a reputed Indian university as a media studies professor to build rapport with students - leading to extended dialogues even after fieldwork was completed. The first author's presence among students was thus framed by her identity as a reasonably but not significantly older Indian woman, a former journalist & university professor, and a fresh PhD from abroad, now home.

Our data collection spanned a variety of sources : 1) Participant observation in classrooms where the first author was accompanied by another colleague in the early stages of the study totaling to approximately 350 hours of observing 109 third-year students (n=109) belonging to two streams - computer science (CS) and electronic and computer engineering (ECE). 2). Interview sessions with students were conducted both individually as well as in groups with 53 students (n =53). 3) and preliminary surveys on student demographics and technology use and access with 109 students (n = 109). 4) We "hung out" in a variety of spaces (i.e. hallways, labs, and cafeteria) that helped in building rapport with the students. 5) The first author also sought the permission of the college authorities and moved into the on campus dormitory for a period of eight days in order to better understand the life of students who chose to live in the campus dormitories. Though access was limited to the girls dormitories, this stay served as a period of intensive field immersion facilitating in-depth observations through participation in the routine of hostel life and more freewheeling interactions with students that took the form of both recorded as well as informal conversations. 6) Lastly, the first author, also embedded herself in a class WhatsApp group to observe the activity and interactions of the students in their digital 'hangout' space.

The class WhatsApp group especially, carries great significance for students at SOIT. Of the two classes that we were observing, one class refused to grant access to their group citing privacy concerns in admitting an outsider into their class' online space. We fared significantly better in our attempt to gain access to the group of the second class owing to a good rapport with the popular students of the class. These 'popular' students facilitated our access to their WhatsApp group by signaling their acceptance of us and our research agenda. This access was again negotiated by the first author who explained the research interest for observing their WhatsApp activity. We then asked the group administrator to post our request on the class group and secure the consent of all members. The members responded with their agreement on the group and once everyone's consent was gathered, the first author was added with the understanding that her role would be that of a silent observer with permission to report

data for research purposes while protecting the anonymity and confidentiality of all participants. All student names used in this paper to report data have been suitably anonymized.

While the group had been in existence since August 2013 and we continue to be a part of it, the reported findings are a result of a 45-day observation from April 15- May 30 2014. These observations were buttressed with follow up questions to students about their activity thus resulting in greater clarity about the group's activity. Most of the conversation in the group took place in English with occasional use of the local language – Kannada. Finally, though we did not announce any compensation for student participation in the beginning or during the study, we provided all participants Flipkart gift vouchers of Rs. 250 each (~US\$ 4) at the end of fieldwork.

Analysis

Our analysis was primarily guided by the constant comparative method [17]. Transcriptions of both interviews and WhatsApp group activity along with observation notes were repeatedly read by the first author. The insights from these readings were shared and discussed with students during their lunch break and free lecture hours to seek opinions on the way the first author was interpreting their WhatsApp use. This constant interpretive process led to the emergence of conceptual categories that were analyzed in tandem with the structural features of WhatsApp to formulate final categories. The second author contributed her insights on these categories based on her experience of studying the SNS use of Indian youth. The categories were further developed by reading relevant literature that helped reflect and refine on the final categories. Finally, we arrived at themes from these categories that would best help us communicate the findings of our research.

FINDINGS

We begin our findings by describing some salient socio-cultural features of SOIT that help locate in context the emergence of WhatsApp as a popular channel for cross-gender communication:

Gendered Socio-spatial Classroom Arrangements

One of the most striking features of classrooms in SOIT is the neat gender segregation of students. In some classrooms, the seating was split in the middle with the girls and boys occupying one half each of the room, while in others, a few groups of boys and girls were scattered around the classroom. Whatever the seating arrangements, the unwritten norm dictated that boys and girls never sat together or shared the same bench. This segregation was also observed in lab sessions as well as college wide sessions that took place in a large seminar hall. Moreover, we observed this pattern even during the college fest when the environment was much more casual and informal and had mixed gender teams competing for various events ranging from dumb charades, song and dance contests, speech and debate et.al.

One woman professor we frequently interacted with opined that segregated seating was a desirable norm to have and that

it was nothing more than an extension of what students were used to in school. During the course of our conversation, she cautiously joked that this was a slightly controversial topic. She said, *"Students join college fresh out of their plus twos (high school in India). Their behavior is still childish (sic). This seating (segregation) is actually a way of giving disciplinary respect to the teacher. If they sit together, it may give rise to some complications."* We probed further about why mixed sex seating could be controversial and undisciplined. To this, the professor referred to the years that we (the authors) had spent abroad in the United States and sought to differentiate our social contexts from SOIT's. She said, *"We are different from the western world. We are more cultural and religious and it is best we follow tradition."*

"We are Brothers and Sisters"!

The emphasis on segregated seating was not entirely unwelcome by students and we received a range of responses when we invited students to comment on seating arrangements. While some students shrugged and accepted it as an extension of the norm from their primary and high school days, some students reported that though there was no formal diktat on mixed sex seating, a few professors had reprimanded boys and girls who were seated together during class thus deterring others from doing the same. Recalled one student, *"Even if you say hi (to an opposite sex member), that's a big issue in the class."*

The restrictive seating norms at SOIT reflect the quality of face-to-face interactions that students had with the opposite sex. Girls who struck friendships with boys said they were often the target of gossip while boys who mingled and spoke to girls were often at the receiving end of their male classmates' ire. Suresh an ECE student who found no reason to hold back from interacting with girls shared his experience, *"There would have been absolutely no problem if everybody spoke to everybody else in my class, but imagine in a class of 50 I am the only one talking to girls. The boys got really jealous of me and spread rumors about me and the girls. I did not let it bother me. I continued making friends and eventually the boys got bored. I mean how many girls can they pair me off with so they gave up."* Karan who is Suresh's closest friend in SOIT echoed his views, *"Boys who speak to girls are envied. We get every possible nicknames. We are also approached by boys who are romantically interested in certain girls and questioned on our interaction with those girls. We are then asked to facilitate contact with them."* Jagan who has been in a steady relationship with his classmate Sarita since the first semester said, *"The teasing did bother me for some time and we (Sarita and he) even had fights about it, and then we stopped caring."* On her part, Sarita said, *"Gossiping about girls who speak to boys is common, but you realize how hurtful it is only when you find yourself targeted."*

Even if the majority of students did not go on to form the kind of bonds that allowed casual and frequent face-to-face interaction with members of the opposite sex, the daily

rhythm of college life was often punctuated with tentative cross-gender exchanges for functional purposes. For instance, one of the major reasons meriting a boy approaching and speaking to a girl face-to-face in the college, was for lecture notes. Girls were commonly perceived to be more diligent than boys about attending classes and maintaining notes. Occasions such as a boy missing a lecture or examinations often meant that notes taken by the 'studious' girls would be much sought after by others in the class. Not only was an interaction around class notes often regarded as a legitimate reason for a boy and girl to interact, but it also acted as a safe alibi to further any latent romantic feelings. Said Karan, *"Everyone knows that girls are academically more diligent. They tend to attend classes and be attentive resulting in good notes. Before examinations, I generally field a lot of phone calls from the other boys in the class and they would plead with me to get notes from the girls because they were frightened to do it themselves."*

Eventually even if friendships grew out of these occasional interactions around classroom notes, both boys and girls were quick to dub their opposite sex friends as purely platonic and firmly labeled their relation as - "She is my sister" or "He is like a brother to me." Youth in India often characterize their heterosocial friendships with peers as that of a brother or a sister to protect themselves from gossip and teasing by their peers and avoid scrutiny from the society at large [1]. Once, Jhanvi who was scrolling through her contact lists to help us identify the administrator of the class group halted at a photograph of a boy with his arm around a girl. We asked her if the girl was the administrator's girlfriend. Horrified, Jhanvi corrected us, *"Oh no, she is like a sister to him."* Jhanvi herself engaged in face-to-face interactions with only one boy in her class – Shashi, who was in a steady relationship with one of her classmates. Predictably, she also dubbed him as her brother. Jhanvi's interactions with Shashi began when he approached her for notes since both he and his girlfriend had missed a few classes. As these interactions progressed to firmer friendship, Jhanvi now labels their relationship as that of a 'brother and a sister'.

WhatsApp as a Techno-social Infrastructure at SOIT

For an engineering institute, SOIT offers both students as well as its instructors minimal information technology infrastructure. Although it does not have a campus wide wireless network, it has two computer labs available to students during designated working hours only. The library also has about five computers that are accessible during college hours. Since the students are usually attending classes during this time, the computers are not really used. SOIT has a website, but it does not offer students any semblance of an academic digital presence such as a student portal or a classroom management system. Most of the administration and teaching is conducted through offline means. Information relevant to students is communicated via notice boards that are located at strategic points around the college premises. The onus of being informed is thus placed on the students

who are required to walk up to the notice boards and sift for relevant information from among many other notices that are pinned to the board. Mobile phones are not allowed in the classrooms and many students store their phones in small shared lockers in the college. Despite this, some students carry mobile phones to class and we observed a few students surreptitiously texting during lectures.

In the survey that we conducted to gather demographic and communication information, 68 out of 109 students reported WhatsApp as a primary means of communication with their friends. Students also reported a very high dependence on mobile phones for their communication needs. They typically had pre-paid mobile connections and subscribed to Internet 'net packs' spending on an average Rs. 50/- (.9\$) per month for 1 GB of data at 3G speed. For students who lived on campus, dependence on mobile internet was especially high. While a culture of sharing resources such as laptops and pre-paid Internet data cards existed, most students who lived on campus, reported complete dependency on mobile internet for their daily usage as the college did not provide for Internet or laptop facility in the hostels. The 'free' messaging service that WhatsApp afforded was thus a big draw for the students given that economic considerations was a prime driver in their choice of communication [3]. Access to internet connectivity, via mobile enabled Internet, laptops and desktops though fairly prevalent was not a given for everyone due to reasons of affordability. Even for students who were living off campus with their families, sometimes Internet access was possible only at the local cybercafé. Some students had access to a desktop and Internet at home, but could not afford a smartphone. Such students generally relied on their friends to keep them updated not only about important school-related information that was shared on WhatsApp, but also the 'fun' stuff that was being circulated on the group.

A group of boys that we spoke to reported that only one amongst them (Omar) had access to an Internet connected smartphone where WhatsApp could be accessed. When they met in college, Omar's phone was often passed around amongst his friends who wanted to catch up on the latest exchanges that were taking place on the class WhatsApp group. Omar's friend Suresh said, *"We are very interested in our WhatsApp group. Omar shows us all the videos and photos that are shared there. His phone is usually with one of us in college and we pass it around to catch up on the previous night's activity on the group."*

If Omar's friends get by with circulating his phone around, then for Surekha, this dependency was trying enough to make attempts to become independent at accessing WhatsApp even without a smartphone. Using Bluestacks [2], Surekha now accesses WhatsApp even though she is tethered to her laptop. She said, *"I feel if I am not on WhatsApp, I miss out on a lot. Of course, my friends would keep me in the loop about everything, but I wanted to experience and be a part of WhatsApp myself. I have a laptop that I share with my*

family and we have wired Internet connectivity at home so a friend helped me download Bluestacks through which I can now access WhatsApp. When I go home from college in the evenings, I use WhatsApp and participate in all of the group as well as interpersonal conversations with my friends.

The Digital Bridge of WhatsApp

To illustrate the role that WhatsApp plays in connecting students across the chasms of gender segregation, we return to Jhanvi's friendships with the boys in her class. As mentioned previously, Shashi was the only boy Jhanvi interacted with face-to-face. However, he was not the only male classmate that she considered her friend. Jhanvi was friends with at least four other boys in her class and though they had never interacted in person, she reported that she shared a lot of intensely personal thoughts with them on WhatsApp. How do these friendships begin amidst the social barriers of cross gender interaction?

The Mobile Number

Noting the growing popularity of WhatsApp amongst their peer group, Jhanvi's classmate – Rajesh decided that it would be a good idea to form a WhatsApp group for their class. In the beginning, the group was only composed of Rajesh and his own friends, but slowly as more people in the class began to get on to WhatsApp, Rajesh began adding his classmates to the group. With growing numbers, the group began to see increased activity in the form of forwards and jokes that students shared on the group. Not only that, the group was also a phone directory of sorts with every member's phone number visible to other members of the group. Additionally, WhatsApp notifies all members every time a member joins or leaves a group. Where earlier mobile numbers would have remained private except when explicitly shared with one another, group membership now meant that numbers were rendered visible to all members. Jhanvi said that her friendship with the boys began when some of them messaged her on WhatsApp. These messages were innocuous and were limited to exchanging hellos in the beginning. However, they soon progressed to long conversations that took place after college hours. Interestingly, most WhatsApp friendships at SOIT are initiated by boys and we did not come across any girl who had or at least admitted to 'befriending' a boy on WhatsApp.

Laughing at the way gender interactions in her class play out, Jhanvi said, "Yes, we do sit separately in class, but actually we are very friendly with each other even though we don't interact directly. I speak face-to-face only with Shashi, but on WhatsApp I am constantly in touch with Vijay and Sanath. In class, we act as if we don't know each other, but once we go home, we regularly ping each other. Our conversation usually begins with wishing each other "good morning" or "good evening" and asking each other how the day had been. Even if I do speak face-to-face, with them, it will be very business-like. Perhaps exchanging pen drives or notebooks. But on WhatsApp, we chat like friends. If they notice that I am not smiling in class, they message to ask

why I was sad or if I don't come to class, they message to know the reason for my absence. We don't have these conversations face-to-face. There is this one boy who I have never spoken to directly. We have been classmates for three years now, but on WhatsApp he has asked me for my notes nearly eight times this semester. I take a picture of my notes and share it with him on WhatsApp, but we have never ever spoken to each other."

Vijay agrees with Jhanvi's experience. He said, "I feel you can get to know girls on WhatsApp. I generally begin by asking them how their day went or I ask them for their notes. From there on, the conversation could progress to asking about who their favorite actor is or their favorite film. With such questions, I can get to know the person and then we can see if our interests match and if there is potential for furthering the friendship." We asked Vijay why he could not have the same conversations with a girl directly and he said, "It is not that we don't talk to girls directly, but it is infrequent. In class we don't have time. They are sitting on one side and we sit on the other. I am ready to talk, but I feel the girls might feel awkward if I approach them so I ping them on WhatsApp."

Maya who has a mixed gender friend group in college disagrees with Vijay's view. She said, "I really wonder about why boys find it difficult to speak to us. They make no attempts to be friends. I find it very weird that the boys ping me and attempt to speak to me on WhatsApp, but not face-to-face."

While some students such as Maya find the hesitancy exhibited by boys to speak to them face-to-face strange, many others welcome the opportunity that WhatsApp allows them to have at least some kind of interaction with the opposite sex. This opportunity mostly begins with membership in the class WhatsApp group that facilitates access to everyone's mobile number.

Group Formation

The lack of communication between boys and girls at SOIT was in some ways also responsible for the formation of a WhatsApp group. According to the group administrator of the WhatsApp group that we were observing, this communication also impacted class unity. Said Resham, "There was hardly any communication in our class between us. We would only smile at each other with no conversation. I was really upset about this because I wanted our class to have unity and be a more interactive place where we also did fun things such as celebrate each other's birthdays. The idea for forming a class WhatsApp group actually came from Facebook. In our second semester, we formed a class group on Facebook, but it was largely inactive. We would only post the class timetable there. I realized a lot of people were using WhatsApp to talk to their friends, so I decided to form a group to get my classmates to talk to each other. I felt that WhatsApp would work more than Facebook."

Resham also said that the communication in the group took time to take off. From a class with around 55 students, the group currently has 50 members although the number of students regularly active on the group is around 32. Resham is satisfied by the number of people who are active and said, *"We can't force people to be interactive and not everybody will even be interested. In the beginning there were very few members so the group was not as active as it is these days. People were only sharing funny pictures on the group. But as more people joined, the conversations increased. Now boys and girls even address each other by names and have conversations about things such as class happenings, and national politics. We all tease each other and it has helped break the ice. I think it has really helped us bond as a class."*

Echoing Resham, Shanti said, *"I am older to the other students in the class and because I had to repeat a year, I barely knew anyone when the semester began. However, all that changed when I was added to the class group. I am naturally gregarious and I began interacting with a lot of people in my class after chatting with them on WhatsApp. I began private messaging with some of the boys too, but we don't speak much face-to-face. At the most they will greet me in class and ask if I had breakfast, but on WhatsApp we constantly message each other and converse on many things. It is a little strange, but I think it is a mix of ego and shyness that prevents boys from talking to us in person. So at least they converse with us on WhatsApp."*

Gender and Event-based Group Splintering

Typically, every student was a part of at least four WhatsApp groups that were directly connected to SOIT. While most members were part of their class groups, the online space was not completely devoid of gender segregation. In both the classes that we observed, girls and boys were also part of 'girls' and 'boys' class groups on WhatsApp. These groups were formed with a view to replicate the real world homosocial interactions that the students were used to when with their own genders. However, most of the girls we spoke to reported very little activity on the girls' only group. In contrast, the boys reported more usage. We asked Satish an ECE student why he felt the need for a 'boys-only' group and he said, *"That is to maintain decency. Decency in the sense that there are no language constraints and we can be as colorful as we want. We cannot be this liberal if girls are also present"*

Aniket, a final year student had another take on the need for a boys-only group and pointed to the topical preferences for discussion of each gender. He said, *"In our class the boys group came into being because there was a lot of discussion about cricket on the class group. And then suddenly one day the girls started discussing about the sarees they would wear for the traditional day celebrations. We felt it was better if such things were discussed amongst interested parties. It so happened that only boys were in favor of cricket discussions and only girls were in favor of sarees discussions so that is when the split happened though we all are very active in our*

common class group. Sometimes, the gender specific groups are handy to have."

While gender distinctions were responsible for the creation of some groups, other groups were formed on the basis of certain events or shared interests and routines. For instance, students who went on a three-day class trip to a nuclear power plant formed a group to share photographs and trip memories. Other groups included a 'dormitory-WhatsApp' group or 'college-fest committee' group. Similarly, students belonged to other SOIT-related groups such as 'bus-groups' depending on which college bus route they traveled on. The function that these groups served varied from exchange of information such as: "no water in hostel today" to sharing 'forwards', jokes, puzzles, and an easy way to coordinate outings.

Conflicts and Resolutions

Even as WhatsApp lead to increased interaction amongst boys and girls that was largely welcomed by both genders, it was not always smooth sailing. The existing gender tensions that were rooted in offline realities were often mirrored and sometimes even exacerbated online. Groups witnessed their fair share of stormy interactions with members sometimes quitting the group in anger. Interestingly, most conflicts that spilled into the class WhatsApp groups were usually heterosocial and interpersonal in nature. We were privy to one such incident that took place after we were granted access to the group. The incident involved Shanti and Rupesh and an altercation they had in the college canteen. Their offline quarrel quickly escalated to an online conflict that was conducted on the class WhatsApp group. Their interaction on the group spiraled into name calling and ended only when a fellow classmate intervened and asked members to maintain decorum on the class group. The quarrel ended with both Shanti and Rupesh quitting the group although both rejoined a couple of days later. We spoke to Shanti after the incident and she said, *"I have known Rupesh for about five months now. We were talking in the cafeteria and he began calling me an 'aunty'. I responded by calling him a 'child'. Later in the evening when we all began chatting on the class group, I again teased him by calling him a child and he responded by saying something insulting about my character. I reacted very angrily as it wasn't warranted on his part. That is when Kshitija intervened and made a general request to everyone to keep things peaceful. I was very angry and left the group and so did Rupesh."*

Such interactions are revealing about the gender tensions that exist amongst students. With tentative friendships between boys and girls, misunderstandings often flare into serious conflicts that result in both parties putting an end to any further interaction with each other. Shanti said that the result of the conflict was that her interaction on the group has become much more muted. She said, *"I feel I should be careful about what I post on the group so I don't message too much. Plus, Rupesh and I don't talk to each other anymore on WhatsApp or face-to-face."* Another student Rani had a

similar experience as Shanti. Rani is a very frequent user of WhatsApp, but a lurker on the class group. She said, *“Before I joined the group, a boy made a hurtful comment about me. My friends who were in the group stood up for me. I did join the class group after that, but prefer not participating in the conversations. I am much more active in the WhatsApp group that I have created with seven of my other class friends. I feel more at ease there.”*

We found that whenever conflicts took place on the groups, the aggrieved parties immediately left the WhatsApp group automatically broadcasting their unhappiness to all the other members because of WhatsApp's group activity notification feature. However, this leave taking was rarely permanent. Not only were quitters usually persuaded by other members to return, but they would also willingly return and continue their participation on the group.

Enacting Group Communication on WhatsApp

Until now, we focused on the gendered nature of WhatsApp use owing to the social norms that are reflected in the student culture at SOIT. We now explain the enactment of communication on WhatsApp groups such that it transforms a gender segregated classroom into a group with a sense of community owing to its online activities.

What is in a Name?

One of the ways in which the group expressed its identity as a singular unit was by changing the group name to reflect the collective sentiments of its members. While the usual name of the group remained 'ECE B' to signal that they were electronics and communications engineering students belonging to section 'B', the name was changed at intervals to mark incidents of significance to members. For instance, the class welcomed us as an observer of their WhatsApp group not only by individually typing "welcome Ma'am" messages, but also by changing their group name to "Welcome Ma'am" followed by two emoticons of a girl and a pair of hands joined together in a *namaste* – the traditional Indian greeting. This group name remained in force for a couple of days after which the group reverted to its usual name of 'ECE B'. Similarly, the group changed its name to "Vote maadi" (cast your vote) followed by emoticons of a finger pointing and a smiley exhorting members to vote in the general parliamentary elections in India. The group also changes its name to wish members on their birthdays. Typically, a member's birthday is observed on the group by changing the name to "Happy Birthday – Name".

The name changes also reflect the pride members feel in belonging to their class. Recently, Resham changed the group name to 'ECE B Riders'. When asked the reason for the name change, Resham spoke about how the organizing committee for the college fest had maximum representation from her class. She said, *“I was really proud at the efforts my classmates were putting in organizing the college fest. I changed the name to 'ECE B Riders' because I felt we were the coolest class around.”* Every member in the group has

the freedom to change the name and Resham said that there had never been any conflicts or dispute about name changes. Generally, name changes were followed by members signaling their approval of the change by responding with various emoticons such as 'clapping', 'thumbs up', and 'smileys'. Overall, it contributed to members feeling that their class was a cohesive unit that functioned well as a group.

Group Content

We found the communication between members on the group could be categorized into three main sections. We discuss each of them in the following sections:

Small Talk

One of the important kinds of content that members exchange with each other on the group is small talk. This usually takes the form of good morning messages that begin early in the morning before members leave for college. One 'good morning' message fetches similar 'good morning' responses from at least five to six other members. This is often a ritualistic start to the WhatsApp exchanges on the group for the day. We asked members about their opinion on these messages and wondered if some members viewed them as spam. Surekha who is a lurker on the group, but enjoys the group enough to access it from her laptop in the absence of a smartphone said, *“I don't think the messages are spam. In fact the days that I don't attend college, I feel like I belong to the class because of the messages.”*

The group generally remains inactive during college hours when classes and restrictions on phone use limit any WhatsApp group activity. Thus, most activity on the group begins in the evenings. The activity for the evening is preceded by good evening messages. These messages are then followed by queries about what was had for dinner. Amidst all of this, members begin conversations by posting forwards that generally take the form of puzzles and jokes. When we asked members where they got this content from, they all revealed that the content came to them through membership in other WhatsApp groups. For instance, Shanti shared a love story on the group lasting over five episodes. She would post one episode every day and her post was eagerly awaited by other members who would plead with her to share the complete story. We asked Shanti about this and she said, *“I got the story from my school WhatsApp group. I restricted myself to one episode per day because I knew they were enjoying the story and I liked maintaining the suspense in the tale.”*

Sharing content such as stories, puzzles, and jokes acted as an icebreaker for the day and often progressed to a lot of mutual teasing and laughter amongst members. After sharing a puzzle with the group, Tina declared that she would gift a BMW car to whoever cracked it. Ever since, Tina is often teased with numerous demands for fancy cars by her classmates. Badgering Resham, the group administrator, for a

party on the slightest pretext is another common practice and leads to a lot of laughter in the group.

Academic Discussion

While small talks helps in maintaining a spirit of light heartedness in the group, it is often also the site where important academic information is exchanged. Members post queries such as “*What did I miss in class today? Was it a lot?*” A query such as this is usually followed by a list of topics that were taught with reassuring messages such as “*Don't worry. It is easy you will catch up.*” Sometimes, queries are more specific such as “*Can anyone tell me how to write interfacing programs in record?.. programs on rhs, lhs what to write?*” This particular message was followed by a few members posting photographs of their notes on the groups as examples of the way interfacing programs were written.

A common practice that members indulge in is to share images of their notes with the group. As a mobile application that supports sharing of text, image, video, and voice, WhatsApp's diverse features are a major attraction and it is very easy for members to post requests for class notes on the group if they are missing sessions. In response, within seconds, whoever has the information takes a picture of the content using the mobile phone camera and shares it with the rest of the group. Easy dissemination of images is a crucial feature of WhatsApp and enables members to catch up on notes they may have missed. It also helps in updating everybody in the group about notices that are displayed on the college board. Said Ragini, “*The college board is often cluttered with a lot of notices and it is easy to miss information. If one of us spots something important, then we take a picture and share it on the group. All of us remain updated on important information this way.*”

Class/College Activities

Another major role that the WhatsApp group plays in the life of the students is of being a natural online extension of the activities that form a part of their college life. Members frequently use the group to discuss, laugh, and even vent at the quirks of different professors and class happenings. One particular professor was a favorite for discussion on the group due to his quirks that brooked little disobedience from students. Members often created funny memes using his photographs and shared them on the group. They reported that such practices not only helped them cope with the vagaries of college life, but also helped the group maintain their bond with each other.

In one particularly memorable incident, the students decided to mass bunk a class having returned from a class trip the previous night. It resulted in the college sending an SMS to the parents informing them about their ward's behavior. This created a fair amount of angst amongst the students and led to animated discussions on the group. While the students said that their parents did not take the SMS from the college seriously, shrugging it as a part of college life, the students

felt that it was completely unfair on the part of the college to inform their parents of their absence from class. Needless to report, the WhatsApp group activity on the day the SMS was sent to the parents made for some entertaining observations as each student gave free vent to their feelings about their college.

DISCUSSION

This paper attempts to locate student's experiences in interacting with the opposite sex in an environment of gender segregation. Leveraging the popularity of a MIM, students found that not only could they make tentative attempts at friendship, they could also transform their segregated classroom into a group with a perceptible sense of community. Though students seldom broke through the online screen to pursue their interactions in the real world, the forging of equations in a low risk digital environment benefited the students by providing avenues for learning about each other, collaborating for exchange of notes and information, as well as serving as a space for entertainment. We detailed the enactment of communication on the group and illustrated the transformation of a classroom of strangers to an online community of friends. This transformation was aided by various communicative instances such as small talk, frequent changing of the group name, and discussion about class and college activities.

Our observation and analyses reveal that WhatsApp is an empowering medium for our participants who could use it to subvert the traditional diktats of social norms regulating heterosocial peer friendships in the face of institutionalized social disapproval. Here, the ubiquity of the mobile phone coupled with the privacy of an MIM liberated students and created an alternative space where they could get to know one another. As with any human interaction, communication could sometimes turn hostile and reproduce the offline realities of tentative acquaintanceship with one another. Largely, though students felt that they were better off with such a technology at their disposal.

LIMITATIONS

We acknowledge that student behaviour on the WhatsApp group may have been modified due to our presence. However, our constant offline contact with the students helped alleviate any concerns they may have had though we did not hear of any concern directly or through the grapevine. Instead, students reassured us that they were continuing with their usual activities on the group. Our research is also limited to one engineering college in Bengaluru. While we do not claim generalizability, we believe that our study provides insights into how a mobile app facilitates cross gender interaction constrained by real world social norms.

CONCLUSION

Our paper provides an insight into how WhatsApp is steadily making inroads into the lived experiences of students who otherwise are not the primary beneficiaries of the new wealth of globalizing India. Their non-elite educational background and the peri-urban cultural milieu create further constraints in

entering into an open friendship with the opposite sex. It is here that we see the subversive role of WhatsApp in transforming a restricted offline environment into a fluid digital space that allows exploration of friending opportunities and easy communication.

ACKNOWLEDGMENTS

Our thanks to the students and staff at SOIT for their generosity in making this research possible. Thanks to Rinku Gajera and Om Deshmukh for their assistance with fieldwork. We thank our anonymous reviewers and AC for their thoughtful suggestions and reviews. Finally, Amit Trivedi and Amitabh Bhattacharya for music and lyrics.

REFERENCES

1. Abraham, L. Bhai-behen, true love, time pass, friendships and sexual partnerships among youth in an Indian metropolis. In *An International Journal for Research, Intervention and Care*, (2001). 337-353.
2. Ames, M.G. Managing mobile multitasking: The culture of iPhones on Stanford campus. In *Proceedings of CSCW'13*, ACM (2013), 1487-1498.
3. Chanaana, K. Hinduism and female sexuality: social control and education of girls in India. In *Sociological Bulletin*, 50, (2001), 37-63.
4. Church, K. and de Oliveira, R. What's up with WhatsApp? Comparing mobile instant messaging behaviors with traditional SMS. In *Proceedings of MobileHCI'13*, ACM (2013), 352-361.
5. Das, V. (1998). Femininity and the orientation to the body. In *Socialization, Education and Women*, Chanaana, K, Ed. Orient Longman (1988), 193-207.
6. De Certeau, M. (1984) The Practice of Everyday Life, Berkeley: University of California Press.
7. Dube, L. *Women and Kinship: Comparative Perspectives on Gender in South and South-East Asia*, United Nations University Press, (1988).
8. Grinter, R.E. and Palen, L. Instant messaging in teen life. In *Proceedings of CSCW'02*, ACM (2002), 21-30.
9. Grinter, R.E. and Eldridge, M. Wan2tlk?: Everyday text messaging. In *Proceedings of CHI'2003*, ACM (2003), 441-448.
10. <http://whatsapp.com>
11. Ito, M. Mobile phones, Japanese youth, and the replacement of social contact. In Ling, R. and Pederson, P. (eds) In *Mobile Communication and Renegotiation of the Public Sphere*. Springer (2005), 131-148.
12. Nisbett, N. Friendship, consumption, morality: practising identity, negotiating hierarchy in middle-class Bangalore. In *Journal of the Royal Anthropological Institute*, 13, (2007) 935-950
13. O'Hara, K., Massimi, M., Harper, R., Rubens, S., Morris, J. Everyday Dwelling with WhatsApp. In *Proceedings of CSCW'14*, ACM Press (2014).
14. Osella, C & Osella, F. Friendship and Flirting: Micro-Politics in Kerala, South India Author(s): *The Journal of the Royal Anthropological Institute*, 4, 2 (1998), 189-206
15. Rangaswamy, N and Cutrell, E. 'Re-Sourceful Networks: Notes from a Mobile Social Networking Platform in India', *Pacific Affairs*, Fall, 2012
16. Rogers, M. Modernity, 'authenticity', and ambivalence: subaltern masculinities on a South Indian college campus. *Journal of the Royal Anthropological Institute* 14, 79-95. (2008).
17. Strauss, A. and Corbin, J. *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA: Sage Publications, 1998.
18. Taylor, S.A. and Harper, R. Age-old Practices in the 'New World': A study of gift-giving between teenage mobile phone users. In *Proceedings of CHI'02*, ACM (2002), 439-446.
19. Walton, M., Hassreiter, S., Marsden, G., and Allen, S. Degrees of sharing: Proximate media sharing and messaging by young people in Khayelitsha. In *Proceedings of MobileHCI'12*, ACM (2012), 403-41.