# Adolescent use of mobile phones: A social context

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*During adolescence (e.g. ages 13-15) communication and connectedness with peers is an essential part of adolescents' self-identity; mobiles phones are a conduit that maintains both communication and connectedness among adolescents whereby social interactions and connectedness are not limited by place, context or time. To study mobile phone usage among adolescents, Grade 9 (n= 218) middle-school students in Queensland, Australia were surveyed using a self-developed questionnaire. The purpose was to explore the relationship between mobile phone use and developmental frameworks. The results suggest that young people use their mobile phones as a way of expressing their sense of self and as a means of communicating quickly between peers.*

**Key words:** Early adolescence; mobile phones; relationships

## Introduction

Scholarly analysis of the social aspects of communication technology have emphasised how technology can be used to solve people's problems and needs. For example, models such as Katz's uses and gratifications model (Katz, Blumler, & Gurevitch, 1974) have been widely built upon in the subsequent decades. However, the role of a given technology, in this case mobile phones, in communication is not only a matter of purpose it is also a matter of function and need. As Katz and Aakhus (2002) noted, people do not necessarily adopt a tool just because it improves their communication or eases a task, they may adopt it in ways that the technology designers did not perceive. This gap brings our attention to why and how middle-school (i.e. adolescents) students use their mobile phones. To help understand how middle-school students use their mobile phones a developmental framework will be used to help gain valuable insights into teenage mobile phone use and possible trends.

Mobile phones provide adolescents with a new form of social interaction where they are able to develop and maintain their peer group with their own rules and conventions (Auter, 2007). The various modes of communication through mobile phones, text, voice calls, video calls, instant messaging via pre-paid, and pay as you go service, collectively make it easy for adolescents to communicate with each in a variety of ways at any time or place (Auter, 2007; Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; Schiano et al., 2002). Mobile phones have redefined how adolescents communicate and relate to one another and to some degree have replaced conventional methods of communication through increased possibilities of making phone calls, exchanging messages, emailing, sharing data and organising e-calenders, all of which foster a new level of social connectedness as sharing of information is instant, informed and personable (Peters & Allouch, 2005). Mobile phones possibly provide adolescents with a level of gratification through sociability that is likely to reinforce their use of using the device (O'Keefe & Sulanowski, 1995) and contribute towards the process of adolescents forming their own identity and peer networks (Boneva et al., 2006).

During adolescence, communication and connectedness with peers is claimed to be an essential part of adolescents' self-formation (Peterson, 2010). It is asserted that adolescents have two developmental needs: one, to create their own self-identity or individuation away from parents (i.e. through friendship/peer connectedness); and two, the fundamental need to communicate and to be connected with peers (Peterson, 2010). In many ways mobiles phones appear to be a conduit to maintain both communication and connectedness among adolescents where social interactions and connectedness are not limited by place, context or time (Green & Singleton, 2009). Adolescents' use of mobile phones has featured heavily in academic literature since one of the very first studies of adolescence use of mobile phones (Green, 2002). However, few studies have investigated how adolescents come to use mobile phones from a developmental perspective.

Erikson (1968) argued that communicating and connecting with like-minded peer groups is likely to provide adolescents with a sense of security and identity as their views are affirmed, appreciated and reciprocated without any adult influence or interference (Green & Singleton, 2009; Peterson, 2010). During adolescence the necessity for communication and connectedness increases due to the need to shift away from parent-based identities to their own self-identity through the process of individualisation (Berndt & Murphy, 2002; Erikson, 1968; Ling & Yttri, 2002; Peterson, 2010). Ling and Yttri (2005) studied the use of mobiles among teens (n=40), persons aged 19 to 23 (n= 20) and parents (n=20) and found that " adolescents are yearning to develop contact with peers and want to emancipate themselves from their parent's control" (p.15). Based on this finding Ling and Yttri argued that mobile phones did aid in the process of emancipation away from their parents identity to one of their own. In terms of the duration and the reason for calls, a study by Auter (2007) found that over 10 hours a week is spent on mobile phones by university students (n=182, mean age 20 years) with that use being mainly for voice calls (95%). Auter also found that participants used their phone for internet services such as email and surfing the web (8.1%) and only small percentage used their phone for games (4.6%).

Ling and Yttri (2005) argued that obtaining and/or owning a phone has become very easy and all aspects of mobile phones in terms of its usage, appearance, and features are deemed necessary for communicating with friends. The development of portable multimedia technologies be it mobile phones, smart phones or tablets have made communication more attractive, accessible and flexible for adolescents but this has also made mobile phones a necessary part of adolescent culture (Peters & Allouch, 2005). Could this suggest that a great majority of adolescents are likely to own a phone and use it primarily as a multimedia communication tool? While, mobile phones have made communication immediate, direct, explicit and in real-time, little is known about how adolescents communicate (e.g. phone calls, text, IM chat and video chat) with each other, for what purpose and for how long (Green & Singleton, 2009; Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006). Research into this phenomenon is urgent because mobile phones provide unequivocal access for adolescents to communicate at all times without being restricted by distance, time and/or geographical barriers (Boneva et al., 2006; Eckert, 1989).

Mobile phones are deemed a popular and liberating technology allowing a unique opportunity for adolescents (and others) a variety of ways to communicate with each other (Auter, 2007; Green & Singleton, 2009). At a functional level mobile phones have brought a new manner of social interaction and communication without being restricted by distance and/or place or adult intrusion/interference (Boneva et al., 2006). Perhaps the most important function of

mobile phones among adolescents is that they fulfil their need to communicate. In other words communicating through mobile phones has become an integral part of adolescent culture - more than just a talking device, to the extent that it has come to become a preferred mode of personal communication and appears to be a socially acceptable way of communicating and relating to each other (Aoki & Downes, 2003; Wei, 2001). A study by Consumer Electronics Association reported that over 57% of mobile phone users' report using their phones for social purposes (Wireless Phone Reliance, 2001).

Another unique aspect of mobile phones is that they provide for shared experiences such as games and movies. In a contemporary study (n= 29 women and 18 men; ages 14 - 25) Green and Singleton (2009) found that men used their mobile phones for maintaining friendships in terms of organisation of events and business. In contrast, women's mobile phone use was predominately for conversations and 'connectedness'(Charles & Davies, 2005). Does this then suggest that social connectedness could have gender differences, in terms of how males and females come to relate and make friendship groups? In relation to this, Pertierra (2005) noted that mobile phones are enhancing interconnectedness among individuals. Pertierra investigated the use of mobile phones among young adults (n= 364; ages 14 – 23) in Indonesia and found that over 50% used their phones to expand their relationships and friendships and that men used their mobile phones to extend their friendships more than women.

Mobile phones allow adolescents to communicate with each other in real-time to foster friendships through social connectedness (Boneva et al., 2006; Green & Singleton, 2009). Thus, mobile phones have allowed a contemporary mode of contact among individuals which seems to facilitate individuals to be socially connected in real time and to be contactable at all times (Green & Singleton, 2009). Ling and Yttri (2002) noted that "Nobody sits at home and waits" (p. 12), signifying the urgency of contact as well as the need to be immediately available, accessible and contactable.

**Context of the study**

While a number of studies have focused on the use of mobile phones, very few have focused on the actual use among adolescents (Charny, 2002; McFarland, 2002).  In other words very little is known about the use of mobile phone among adolescents aged between 13 and 15. It is important to explore mobile phone usage among adolescents and whether mobile phones are used for mere social interaction, social connectedness and/or safety or other purposes. Exploring to what extent this age group uses their phones to contact friends, family for safety or medical reasons over and above social reasons, coordinating everyday life, shared experiences and sharing of information can provide insight into the precise use of mobile phones in terms of its functionality and usage. Further, by exploring a favoured communication style is in terms of gender, age, and mode of communication can provide insight into how adolescents come to share and relate to one another. The following study aimed to explore two research questions (RQ): one (RQ1): adolescents will have greater contact with their peer group over and above families or siblings; and two (RQ2): that these contacts and interaction will be primarily for social reasons.

The above questions are based on the premise that during adolescence, friendships become increasingly significant as these relationships become more and more meaningful, intentional and purposeful (Peterson, 2010).  Importantly, during this phase peers become central and peer friendships transcend all other salient relationships be it siblings or parents (Ling

& Yttri, 2002). Based on this premise it can be argued that adolescents use mobile phones primarily for communication and as part of an intrinsic gain of being connected with peers for social purposes (Noble, 1987).

**Method**

*Participants*
A total of 224 students participated in the study but only 218 (N = Total number of participants in the study, *n* = subset as per gender) were used for analysis due to insufficient data and/or part completed information. All participants were Grade 9 students from a Secondary State High School (n=218). Students' ages ranged from 13 to 15 with a mean age of 14. This High School is located within a low-social economic area within the 'Western Corridor' between Ipswich and the Brisbane CBD in South-East Queensland, Australia.

*Design*
As part of an English lesson students were given a survey questionnaire in terms of their cell phone use. Surveys were distributed by Research Assistants (Youth Workers) who were working within the school to support student wellbeing. All students across the Grade received and completed the survey at the same time. Further, Research Assistants informed students that this activity was to learn about their use of mobile phones and that it was not a part of their school work and that no student was going to be penalised if they choose not to do the activity. However, all students completed the activity.

Students were given 20 minutes to complete the task and after students completed their responses, they returned the questionnaire to the Research Assistant. Classroom teachers temporarily left their classroom while the task was being undertaken so as to not to influence students. No identifiable data was collected in the survey, except for gender and Grade level.

*Instrument*
A self-developed survey questionnaire was designed to capture adolescent use of mobile phones. The survey question was divided into four sections: introduction, usage, individuality, and tools usage. This last section also invited students to send a 50 character text message inviting their friends to a movie. Apart from demographic questions (Grade, age and gender), all other questions for each of the sections were open-ended to allow for additional comments at any time. The *introduction* section was comprised of 12 questions, ranging from demographical information in terms of Grade, gender, to Grade at which they got their first mobile phone, number of phones students owned, most usage, phone plan (e.g. prepaid or contract), purchase price, monthly cost, age of the phone, make of the phone and model. The *usage* section had 7 questions which asked students what they used the phone for (e.g. social, emergency and/or family), whom they kept in contact with, how they used their phone to contact someone (e.g. text or voice calls), what function was most used in their usage (e.g. vibrate, silent or on/off), how long they used the phone in a week and who would they contact the most with their phone (e.g. family, siblings and/or friends). The *individuality* section had 4 sections dealing with how they changed their phone settings (ring tone, wallpaper, change functions and screen set up) to suit their own individuality. The *tools* section also had 4 questions that invited students to comment on whether they used other tools such as calculators, cameras, games and/or emails.

*Data Analysis*

Data were analysed through the Statistical Package for the Social Sciences (SPSS) to report on statistical significance. Several descriptive tests were performed to investigate demographic details in terms of saliency. Further correlation analyses was performed to explore how two variables were related and to what extent they explained the direction of the relationship.

*Results*

Of the N= 218 questionnaires completed by the Grade 9 students, just over 60% (*n*= 131) of respondents were female. As Table 1 indicates, just over half (55%) received their first mobile phone in primary school (up to Grade 6) with only a small percentage (7.8%) of students' not owning a mobile phone (*n*= 17). The majority of students reported having owned between 1 to 5 phones (76%), with a small percentage of students having owned 6 or more phones (13.8%) indicating that mobile phone ownership has become quite common.

Table 1

*Descriptive Results on Grade First Mobile was Acquired*
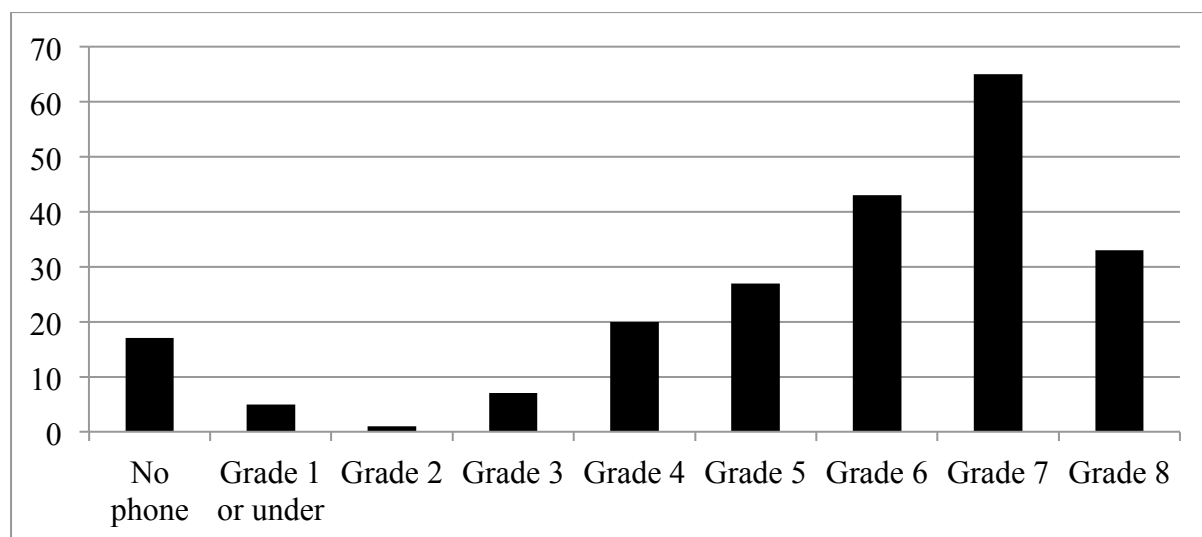


- Total number of first time phone use by Grade

Students were asked for the main reason or justification for needing or owning a mobile phone,. Overwhelmingly, the main reason cited for mobile phone ownership was for socialisation (62%) (see Table 2). This was followed by parental access (44.5%); having a mobile phone for safety reasons was only marginally less prevalent (44%). Needing a mobile phone for medical reasons was the least likely (7.8%) reason for mobile phone ownership.

Table 2

*Comparison Responses to Questionnaire by Main Reason for Phone by Gender*

| Question | Male | | | Female | | | | |
|---|---|---|---|---|---|---|---|---|
| | *n* | *M* | *SD* | *n* | *M* | *SD* | *F* | *p* |
| Safety | 35 | 0.41 | 0.50 | 61 | 0.28 | 0.50 | 2.422 | .439 |
| Medical | 12 | 0.28 | 0.70 | 5 | 0.76 | 0.38 | 33.509 | .015* |
| Parent access | 36 | 1.27 | 1.49 | 61 | 1.40 | 1.50 | 1.504 | .545 |
| Social | 51 | 2.40 | 1.97 | 84 | 2.57 | 1.93 | 1.355 | .543 |

*Nb. Participants could select more than one response for each of the category.*
*n*= total of participants *;* *M* = mean score which is an average score; it is the sum of individual scores divided by the number of individuals. $M = (X1 + X2 + X3 + \ldots + XN) / N = [\Sigma Xi] / N$ ; *SD* = The standard deviation is the square root of the variance = sqrt $[\sigma2]$ = sqrt $[\Sigma (Xi - mean)2 / N]$; The *F* value is a random variable that has an *F* distribution; $F = [s12/\sigma12] / [s22/\sigma22]$; *P* is the probability of an event is a measure of the likelihood that the event will occur. The probability of any event can range from 0 to 1, such that closer to 1, the more likely the event will occur.

There was a significant difference between males and females in terms of medical reasons for using their phones. However, considering the small number who reported 'medical' as a reason for use, the value of this significance (p < .015) is very small. The data also showed that most of the participants used their phones for social purposes (n =135). There was not a significant difference between the genders (p >.543), suggesting that both male and female participants considered social purposes as their main reason for using their phones (M =51, F=84).

Table 3

*Comparison Responses to Question Relating to Contact by Gender*

| Question | Male | | | Female | | | | |
|---|---|---|---|---|---|---|---|---|
| | *n* | *M* | *SD* | *n* | *M* | *SD* | *F* | *p* |
| Family | 44 | 0.51 | 0.50 | 61 | 0.47 | 0.50 | 0.185 | .457 |
| School friends | 47 | 1.11 | 1.00 | 94 | 1.44 | 0.93 | 16.628 | .015* |
| Work | 5 | 0.18 | 0.71 | 3 | 0.07 | 0.45 | 7.582 | .215 |
| Other friends | 25 | 1.18 | 1.83 | 54 | 1.65 | 1.98 | 13.368 | .074 |

As indicated in Table 3, the data showed that the majority of participants used their mobile phones to contact their friends. 'Family and 'other friends' were rated as the second and third contact group. There was a statistically significant difference between male and female students in terms of contacting their school friends (*p* < .015), indicating that female students (*n* = 94) preferred to contact schools friends more so than male classmates (*n* = 47).

Table 4

*Descriptive Results for the Question - 'mostly use phone for'*

|  | Male | Female | Sum | Total |
|---|---|---|---|---|
| Q5. Mostly use phone for | *n* | *n* | *n* | *%* |
| Calls | 37 | 64 | 101 | 46.3 |
| Text | 58 | 112 | 170 | 78.4 |
| Internet/email | 12 | 13 | 25 | 11.5 |
| Radio | 8 | 8 | 16 | 7.3 |
| Games | 21 | 28 | 49 | 22.9 |
| MP3/music | 35 | 67 | 102 | 47.2 |
| Camera | 25 | 66 | 91 | 42.2 |

*Nb. Sum = male + female; Total = (male+Female)/N x 100*

In terms of gender difference i.e. between males and females participants, it is evident that females used calls and text more frequently than their male counterparts. When sending and receiving text messages the number of messages was rarely limited to one, similarly for voice calls. A majority of student's reported making 5 or more voice calls a day (*n*= 128) and 10 or more text messages (*n*= 90). In terms of when their phones were used, most usage occurred on the weekends. Further, Table 4 shows the mobile phone was predominantly used for text messaging (78.4%), followed by music playing (47.2%). Using the phone for voice calls was only marginally less prevalent (46.3%) as was using the phone's camera function (42.2%).

Table 5

*Descriptive Results on 'Pre-paid'/Plan*

| Q7. *Pre-paid/Plan* | n | % |
|---|---|---|
| Pre-paid | 166 | 76.1 |
| On a Plan | 32 | 14.7 |

In relation to costs associated with making calls and sending messages, overwhelmingly, students were on pre-paid phone plans (76.1%) and most had spent under $200 on buying their phones (58.3%) (see Table 5). Over half (58.7%) of the students spent on average $30 a month on phone credit and surprisingly almost 1 in 10 spent $100 or more a month on phone credit (9.6%).

**Discussion**

Overwhelmingly, the current study showed that adolescents aged between 13 and 15 used their mobile phones most frequently for socialisation with the main use being to stay in contact with friends (Auter, 2007; Boneva et al., 2006; Green & Singleton, 2009; Peterson, 2010). This study confirmed the finding by Ling and Yttri (2005) that adolescents spend time communicating with peers over and above all other contacts. This finding supported the developmental paradigm that mobile phones are being used by adolescents to communicate and to be connected with each other, however, to what extent mobile phones alone account for adolescents' self-formation in terms of self-identity and individuation away from parents is still not clear (Peterson, 2010). Most importantly mobiles phones seem to fulfil a fundamental need to communicate and to be connected with peers as most of the participants

reported that they used their mobile phones to have conversations either as voice calls or more preferably as text messages, with a majority of them occurring over the weekends (Peterson, 2010). This appears to confirm that level of gratification of sociability is likely to reinforce the use of mobile phones (O'Keefe & Sulanowski, 1995). This also suggests that adolescent mobile phone use is a mechanism and a conduit for adolescents to keep in close contact with their peer group and friends, not limited by place, context or time (Aoki & Downes, 2003; Green & Singleton, 2009).

In relation to other uses of mobile phones, the study found that the participant's gender did not matter in relation to using the mobile phone for game playing. However, the study did find that female participants used their phones more frequently for calling and messaging others, listening to music and as a camera. These findings confirm the notion stated by Green and Singleton (2009) that females are likely to use mobile for social purposes as the female participants indicated that they used their mobile phones as a way of sharing and interacting with others rather than a device to make calls on. In addition, the study found that students often receive their first mobile phone in the primary school years, suggesting a need to educate this sector on acceptable mobile phone use and etiquette. Furthermore, the study findings indicated that students are responsible mobile phone users in that they predominantly choose to have pre-paid phone plans which may reduce the likelihood of phone debt that can be incurred with plans. Whilst the current study did not ask participants about their disposable income, the findings did indicate that participants spent $30 or more a month on maintaining their phone credit, perhaps suggesting the monetary value they place on having and maintaining a mobile phone.

The current study found that female participants used their mobile phones more frequently than males for voice calls, messaging and for contacting friends and family. The current study also found that females rated having a mobile phone for safety reason higher than males, suggesting that they derived a feeling of safety in having a mobile phone. In conclusion, this study found that mobile phone use amongst adolescents is high and widespread. There is a growing importance to study the use and impact of mobile phone use, particularly amongst adolescents in order to understand and predict future technology use and perhaps more importantly to understand and assist adolescents understand themselves and their communication and socialisation patterns. As mobile phones become ever more complex (integrating multi-media applications 'APPS") the attraction to use them is likely to increase further and this will have an impact on how individuals communicate and socialise not only with others but also with the technology itself. Importantly, it should be noted that mobiles seem to aid or assist in the process of individualisation but it alone cannot explain how adolescents come to the process of self-formation through communication.

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