MATH ON MXIT: THE MEDIUM IS THE MESSAGE

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Homework is a necessary evil in the path of learning mathematics at school. Mathematics homework is traditionally seen as difficult and boring. In the case of difficult homework, "math clubs" and "math extra lessons" are often perceived as even more difficult and more boring. This paper describes a project where learners could get help with their mathematics homework using MXit on their cell phones in the afternoons after school. MXit is a popular instant messaging system where text messages are sent immediately between participants' cell phones and is proprietary software of MXit Lifestyle (Pty) Ltd in Stellenbosch. At the time of this writing, there were over 3 million MXit users in South Africa and nearly 45% of them were teenagers between the ages of 12 and 18. In view of the fact that all high school learners now have to take mathematics or mathematical literacy, MXit offers a fun and exciting medium in which to help learners with mathematics homework. Teachers are welcome to refer their learners to this project or, alternatively, teachers could easily follow the steps taken in this project in order to set up similar systems at their own schools.

INTRODUCTION

Southern Africa needs competent mathematicians for economic development of the region. Unfortunately, by many performance indicators, South Africa is doing poorly in mathematics [1]. There are a number of reasons advanced for this including (but not limited to) not having enough competent educators to teach mathematics [2], out-of-school interventions being normally only available in urban areas for additional cost [3], and mathematics homework being perceived as difficult and boring by the learners [4].

Instant Messaging is a system of communication that is available on computers and cell phones. In many ways, instant messaging is similar to email except that the messages are delivered and received immediately. Instant messaging systems have already successfully been used at university level in distance learning situations [5]. Instant messaging is considered a state-of-the-art communication method.

A North West province high school originally contacted the author of this paper asking for assistance with setting up some sort of "math club" which would make mathematics a fun and exciting topic for teenage learners and would encourage learners to actually do their mathematics homework. This paper describes the resultant project where learners could use MXit instant messaging on their cell phones to get help with their mathematics homework in the afternoons after school.

Although this project originated at one school, "word of mouth" advertising (also known as "viral" advertising) where learners told their friends about the MXit contact ensured that the number of learners grew and the geographical location of the learners spread throughout the country.

Teachers who are interested in this method of helping learners are free to refer their learners to this project. However, teachers who wish to engage learners in a medium which the learners themselves use for hours a day can follow the steps described in this paper and easily set up a similar service for their own schools.

MXIT

MXit is proprietary software of MXit Lifestyle (Pty) Ltd which is based in Stellenbosch, South Africa [6]. The MXit software runs on cell phones and enables participants to instantly send text messages to each other. It is often compared to SMSs; however, one of the major differences between SMSs and MXit is the cost. Messages sent using MXit cost approximately one or two cents. SMSs, however, vary in price depending on cell phone contract type and can cost up to 50 cents each.

The above mentioned cost factor makes MXit very popular with teenagers. Current statistics on the number of people using MXit indicate that there are more than 3 million users in South Africa. Of those 3 million, nearly 45% are between the ages of 12 and 18 [7].

"THE MEDIUM IS THE MESSAGE"

Marshall McLuhan gave the world his famous quote "The medium is the message" [8]. History has proved his statement to be true: publishing a message in a newspaper is a lot different to delivering it by flying Jumbo jets into buildings. The message changes depending on the medium through which it is delivered.

MXit is the latest medium to hit South Africa. It's fast. It's "kewl". It has its own language or "lingo". It's popular with teenagers. These reasons (and many more) make it a fun place to discuss mathematics despite some difficulties with geometry and graphing.

It also provides for a private conversation between two people. So for learners who are too embarrassed to ask for help or who are too embarrassed to go to extra math lessons, MXit can give them access to a tutor in the privacy of their own home. And for learners in rural areas, MXit can give them access to tutors in urban areas.

HOW *MATH ON MXIT* WORKS

Math on MXit takes advantage of the fact that teenagers are already using MXit to communicate with their friends. Teachers and parents are often perceived as being "anti-MXit" by teenagers. Plus very few adults over the age of 25 can match the speed with which a teenager can type messages on a cell phone keypad.

The MXit software, however, allows participants to talk with other instant messaging systems. The other instant messaging systems are traditionally used on computers connected to the internet and have traditionally sized keyboards. We set up a Jabber account with the name dr.math.help.me@jabber.org. Learners would add our account name and address to their list of contacts on their cell phone indicating that it was a Jabber account and not a normal MXit account. They could then use MXit to contact us and discuss their mathematics homework with a tutor.

From an educational point of view, our tutors did not do the learners' homework. The tutors were there to guide the learners into working out the homework problems for themselves. The tutors did not do calculations. The tutors explained how the homework problems were to be done.

EXAMPLES OF CONVERSATIONS

After the initial novelty of *Math on MXit* had worn off, the learners asked quality questions and the conversations between the tutors and learners were similar to questions that a learner would ask of a more traditional tutor. (In view of the fact that people usually keep similar aliases or screen names across numerous websites, in the following conversations, all aliases have been changed).

Some of the conversations were short and to the point:

(15:37:58) Smartie: Hey u work out the area of a triangle by using 'half base x perpendicular h'

(15:39:30) dr.math: right, nice seeing u again.

(15:41:42) Smartie: TnX.. And how do u work out the perimeter

(15:42:33) dr.math: side + side + side

(15:43:06) Smartie: Oh ya.. TnX

(15:43:57) dr.math: bye bye

(13:53:40) Angel: hey!wud da circumference of a circle with a radius 2 b pie2?or if nt wt is da answer nd y

(13:53:57) dr.math: r u in class?

(13:54:05) Angel: yes

(13:54:09) Angel: r u?

(13:54:32) dr.math: no, but we only help after class :-(you might be writing an exame ;-)

(13:55:46) Angel: na we not no woz,we nt allowd 2 hv fones during exams.my teacher told me 2 ask u.bt no worries

(13:56:17) dr.math: anyway the circumference = pi x diameter

(13:58:18) Angel: aw k!i c so da answr wud b 4pie

And some conversations could be quite long and involved:

(13:43:50) dr.math: any math questions

(13:46:21) Cutie: can u pls explain trinomials 2 me

(13:47:10) dr.math: give me an example

(13:48:28) Cutie: xsquare+7x+6

(13:49:25) dr.math: I will use ^ for power $x^2 +7x +6$ so you need to find two numbers that if you multiply them you get 6 and if you add them u get 7. what are those two numbers

(13:50:09) Cutie:

(13:50:41) Cutie: 6 1

(13:51:32) dr.math: right so the factors are (x+6)(x+1)

(13:52:58) Cutie: nw wat bout x^2-5x-6

(13:53:36) Cutie: i dnt get da '-' part

(13:54:20) dr.math: so you need to find two numbers that multiplied give you -6 and added give you -5. that means one of the numbers must be negative and the other positive

(13:55:16) Cutie: +6 -1 ?

(13:56:27) dr.math: does +6 -1 give you -5?

(13:57:44) Cutie: o i c! -6 +1

(13:58:26) dr.math: very good

(13:59:06) Cutie: thanx! u helpd me stax!

(13:59:57) dr.math: good i'm glad to hear that. come back if you have another problem

(14:00:26) Cutie: i wil!

VOLUNTEER TUTORS

Our *Math on Mxit* project started originally with one tutor. As the project grew, however, we recruited tutors from the University of Pretoria. The Faculty of Engineering, Built-Environment and Information Technology have a compulsory module for all undergraduates which requires "volunteer" service on a community based project. *Math on MXit* met the requirements for the community based project. At the time of writing, we had 9 tutors from the university assisting us in the afternoons after school.

HINTS FOR TUTORS

Being a tutor for *Math on MXit* could be stressful at times. We originally geared it towards high school learners but eventually we also had learners as young as Grade

4. So our tutors needed to know everything from how to describe long division up through matric (grade 12) trigonometry.

We did come up with a couple of tricks. In view of the fact that tutor workstations were full sized computers connected to the internet, prior to coming on duty, tutors would point a few internet browsers to http://www.wikipedia.org and http://www.google.com in order to be able to quickly look up any identities or formulas they might have forgotten.

Another thing that occurred was that if one learner had a problem with some aspect of mathematics, there would probably be another learner from the same class who had the same problem. So tutors kept their notes from one session to the next to make it easier to help subsequent participants with the same question.

SOME DIFFICULTIES

Many instant messaging systems (including MXit) do allow for transmitting of pictures and drawings. However, this facility is highly dependent upon the cell phone that the participant is using, and, we did not use that facility.

This did create some challenges when helping people with geometry problems and graphing problems. But with enough time to chat back and forth, we normally succeeded.

(15:08:54) mechanic: It is geometry

(15:09:05) dr.math: Geometry is often difficult over MXit but let's try.

(15:12:36) mechanic: I just need 2 no wat dey r asking... Given: triangleABC with AB=AC. EDT is the perpendicular bisector of AB. BC producd meets EDT in T. Prove dat BT is th third proportional to BC & AB

(15:13:35) dr.math: what is EDT

(15:17:22) mechanic: A line going thru the triangle perpendicular 2 AB ending at 2 points outside the triangle: E on the side of AB & T on da side of AC wher it intersects AB it is cald D wher it intersects AC it is cald F

----- later -----

(15:28:24) dr.math: again, I'm just talking.. cos(b)= BE/BT right?

(15:30:11) mechanic: Bt B & E rnt joind

(15:30:53) dr.math: what did you call the midpoint of AB?

(15:31:27) mechanic: F

(15:31:33) mechanic: Sory

(15:31:49) dr.math: Ok so cos(b) = BF/BT are we together?

(15:33:24) mechanic: Ja

(15:34:33) dr.math: now drop a perpendicular from A down to BC

(15:34:55) mechanic: Ok

(15:35:21) dr.math: so cos(b) = (BC/2) / AB right?

(15:36:53) mechanic: Ok ja

(15:37:15) dr.math: So now BF/BT = (BC/2) / AB you can work it out from there quite easily.

---- later -----

(15:40:11) dr.math: Did you get "So now BF/BT = (BC/2) / AB you can work it out from there quite easily." You can work it from there

(15:42:48) mechanic: Thanx man u r brilant!!!

(15:42:59) dr.math: but you are solving it yourself. well done.

LANGUAGE ISSUES

Our *Math on MXit* was primarily in English because the original tutors did not speak any of the South African languages other than English. We found that Afrikaans speaking learners jumped right in and asked questions interspersing Afrikaans when necessary.

14:13:00) dr.math: so you never told me what you moved onto in math after logs

(14:14:05) Captain Kirk: I dont know what it's called in english:O

(14:14:36) dr.math: OIC. try it in afrikaans maybe I can understand.

(14:15:26) Captain Kirk: Ok its called "rye en reekse":D but that's easy:D

(14:16:03) dr.math: That's beyond my limited Afrikaans vocab. But I'll look it up this weekend

(14:17:42) Captain Kirk: Its like numbers following one another in a pattern:D the first number is usually called T1 and the second one is T2 and so forth:D

(14:18:10) dr.math: series and sequences. Like Fibonnaci 1, 2, 3, 5, 8, 13, 21 etc

(14:24:36) Captain Kirk: Exactly:P my maths teacher says its the easiest part of Gr12 maths:D

We eventually started an Afrikaans equivalent service which was, at the time of writing this paper, operating one afternoon per week. The quality of the conversations between the learners and the tutors was also very good.

(15:28:48) Dr Wiskunde: Hallo cupcake, het jy vir my 'n wiskunde vraag?

(15:30:32) Cupcake: Ons is op die oomblik besig met breuke mar my eintlike vraag

 gaan oor Faktorisering!Ek kan dit glad nie doen nie

(15:31:19) Dr Wiskunde: Ok, gee vir my 'n voorbeeld dan help ek jou om hom uit t

e werk

(15:32:10) Cupcake: Hoe skryf ek die kwadrate met n som

(15:32:37) Dr Wiskunde: bv x^2 is x kwadraat...

(15:34:06) Cupcake: Okey $6p^2 - 24k^2$

(15:35:14) Dr Wiskunde: Se my eers, hoeveel terme het die som?

(15:35:47) Cupcake: 2terme

(15:36:17) Dr Wiskunde: Mooi! Sien jy 'n getal wat jy gemeenskaplik uit die twee

 terme kan uithaal?

(15:36:58) Cupcake: Ja 6

(15:37:32) Dr Wiskunde: Goeie werk! :-) Wat is die antwoord as jy 6 uithaal?

(15:39:24) Cupcake: $6(p^2 - 4k^2)$

(15:40:20) Dr Wiskunde: Reg! Nou, sien jy dat daai antwoord die verskil van twee

 kwadrate is? (want $4 = 2^2$)

(15:41:30) Cupcake: Ja

(15:44:18) Cupcake: Dan kan ek se $6(p+2k)(p-2k)$?

(15:44:47) Dr Wiskunde: Baie geluk!!! :-) Dit is die antwoord! Goeie werk!

We also saw from the types of screen names that participants used to identify themselves that there was a growing portion of ethnic African learners taking part.

We do have plans to expand the Afrikaans service to four afternoons per week (the same as the English service) to start a Zulu service and Tswana service. Hopefully at the time of presenting this paper, we will have more to report on this aspect of our project.

ETHICAL CONCERNS

We had a number of ethical concerns with *Math on MXit* – and still do. These concerns revolve around the fact that the people using this facility were minor children and they were freely giving their cell phone numbers out to total strangers. MXit keeps track of participants by their cell phone numbers. When learners contacted us, we would automatically receive their cell phone numbers.

As soon as a learner contacted us, we would ask for a nick name, an alias, or a screen name of some sort. This nick name would hide or override the cell phone number. The cell phone number would still be stored on our computer, but it would not be immediately visible.

We also informed the learners that we were recording or logging all the conversations. We logged the conversations for four reasons:

- Research purposes: we wanted to know if the learners were asking good questions of the tutors
- Quality purposes: we wanted to ensure that the tutors were answering the questions properly
- Safety of the learners: we needed to ensure that the learners were not being enticed into any illegal or unsafe activities by tutors
- Safety of the tutors: we needed to be able to protect the tutors from any false allegations that might arise

We wrote up a code of conduct which tutors needed to sign before being allowed to work on *Math on MXit*. This code of conduct included the following rules:

1. I will not contact any learner who joins the *Math on MXit* program outside of the *Math on Mxit* program.
2. I will not give any of the cell phone numbers to which I have access to anybody outside of the *Math on MXit* program.
3. I will not ask any personal questions of any of the participants of *Math on MXit*. The one acceptable exception to this rule is "What grade are u in?" in order to judge the level of help that you can give to the participant.
4. I will not answer any personal questions from any of the participants of *Math on MXit*.

5. I will maintain the log files of all conversations and will not tamper or edit them in anyway.
6. I will upload the log files to the appropriate server after each session.
7. I will limit my conversations to topics in mathematics, science, and school work.
8. I will not discuss sex, drugs, or any illegal activities with any of the participants of *Math on MXit*.
9. I will encourage participants in further study of any subjects in which mathematics is important including science, geography, accounting, and computer studies.
10. I will encourage participants to use their cell phone as a research tool (and not just as a convenience) by also informing them about cell phone browsers and cell phone based calculators.

These rules were primarily designed to prevent any actual real physical contact between tutors and learners. The secondary goal of the rules was to encourage the study of mathematics.

UNEXPECTED SOCIAL ASPECTS OF *MATH ON MXIT*

One of the many unexpected features of *Math on MXit* was that many learners developed a virtual social relationship with us and would often just check in after school to say hello:

(13:48:17) dr.math: Ok, what can I help you with today?

(13:51:10) Snake: im in a hostel. i first have 2 eat. after that. im going 2 my room nd then ill need ur help. ply

(13:51:33) dr.math: I'm here until 4, chat l8t

(14:26:50) Snake: ok. thx. in done whith evrything nw.

(14:33:36) pilot: Hey werk j leka

(14:33:53) dr.math: ja

(14:34:15) pilot: Dis kul

(14:34:26) dr.math: any math questions for me?

(14:35:14) pilot: Lots bt I dnt hav the motivation nor energy 2 ask rite nw

Participants enjoyed the enigma of *Math on MXit*. Our code of conduct did not allow the tutors to give out any personal details about themselves. Many of the participants even wondered whether the tutors were computers or humans. (In the conversation below, the term "aslr" is short hand notation for "age, sex, location, race".)

(14:45:33) Gander: R U A DUDE OR DUDET

(13:44:50) Carbon Dioxide: how old are u

(13:44:59) Carbon Dioxide: are u a man

(13:45:22) dr.math: no but we don't do aslr stuff ;-)

(13:45:26) Carbon Dioxide: u could be a sex offender for all i know

(13:46:07) Carbon Dioxide: i dont think i can trust u

(13:46:29) dr.math: that's why we don't ask or answer personal quetsions. but pleease deleete me if you don't trust me

(13:47:41) Carbon Dioxide: wat is pie plus teetha

(20:13:45) Ocean Sprite: Btw how old r u?

(20:13:53) dr.math: Dr math doesn't answer personal quetions

(20:14:45) Ocean Sprite: Aaaaaah....Work out ur age 4 me!Its 2 do wit numbers(G)

(20:16:19) Ocean Sprite: Pweeez

(20:17:06) dr.math: naaaaahhhhh

Another unexpected development was the number of learners who specifically asked for counseling over MXit.

(13:23:52) Speedy: Hay do you know any one that can help me wit relationships

(13:24:41) dr.math: unfortunately, Dr. math doesn't know antyhing about relationsships except the relations between and x and a y on a graph - LOL

(13:25:31) Speedy: Ok:-(thanks because i really need help but thanks anyway

(13:08:42) Hockey Star: can u help me with bf pr0blmz?

(13:08:47) Hockey Star: Datz wat i nd

(13:09:00) dr.math: "bf" what is that?

(13:09:22) dr.math: oh, is BF = boyfriend?

(13:13:30) Hockey Star: yeah

(13:13:57) dr.math: Right now, no, I can't help with bf problems

(13:15:24) dr.math: I only help with math :'(

(13:16:08) Hockey Star: ow awlryt than thanx anyway

LEARNERS' EVALUATION OF *MATH ON MXIT*

Learners shared with us the fact that they thought *Math on MXit* was a success:

(21:11:47) Whale: r u guys world wide?

(21:12:40) dr.math: well, we haven't advertised world wide. But our primary goal is to help South African kids with math. BUt we answer any questions that come to us.

(21:13:55) Whale: o ok! pretty kwl

(21:14:24) dr.math: So do good in math and when you graduate, you can take over my job and help high school kids with math :)

(21:14:58) Whale: i wana study biology

(21:15:17) dr.math: well, if this goes well, we might start a science help also.

(21:19:42) Whale: u guys r gonna b a hit!

THE DARK SIDE OF MXIT

There is, unfortunately, a dark side of *Math on MXit*. It is an extremely sad comment about society when a paper on mathematics education needs to cover sexual activities of minor children. Our tutors received numerous sexual propositions. Our rule was that if sex or drugs were spoken about by a learner, we would give them a warning that the language or topic was not appropriate. If it continued, we would remove them as a contact on our system.

Some of the conversations were initially innocuous:

(15:42:26) Hot Shot: r u sexy?

(15:45:00) dr.math: Hot Shot, that is not appropriate language and I will delete u as a contact if you talk to me again that way

(15:47:01) Hot Shot: im sorry,my english is bad...

(15:49:26) dr.math: well, i don't think you were asking about the weather ;-) so anyway do you have any math homeowrk

(15:50:45) Hot Shot: hehe... well i do... but i dont knw how 2 tell u in english... really... im afrikaans

(13:28:28) Baby Girl: Hey

(13:28:44) Baby Girl: Are you sexy?

(13:28:47) dr.math: hello Baby Girl howzit

(13:29:56) Baby Girl: Im gud nd u

(13:30:29) dr.math: fine. Baby Girl, remember that I record these conversations. some words aren't really acceptable for dr.math ;-)

(13:32:13) Baby Girl: Lol okay

(13:25:02) dr.math: hi. what's your nick name

(13:25:23) unknown_3@mxit.co.za: sexy

(13:25:52) dr.math: no, I want a more appropriate nick name please ;-)

(13:26:16) unknown_3@mxit.co.za: creamy

(13:26:29) dr.math: still pushing your luck :-(one more try

(13:27:43) unknown_3@mxit.co.za: Beauty

(13:28:22) dr.math: OK, Beauty, that's better. I need to tell you that I record these conversations, is that ok with you.

(13:28:42) Beauty: yes

(13:29:26) dr.math: so, Beauty, how's math class going?

(13:29:41) Beauty: nt gud

Some participants tried to cover up their language or propositions by saying that somebody else had been using their cell phone:

(11:25:40) dr.math: just on MXit, afternoons 2-3 and whenever else I may log in. So u said you get 96% in math. well done.

(11:26:04) Giraffe: yeah. do u want a blowjob

----- contact deleted by Dr. Math -----

----- contact reconnected later in the day -----

(14:31:35) dr.math: Sorry, I record these conversations. I deleted u. I don't appreciate your vocabular. keep it clean or I will delete u again.

(14:31:46) Giraffe: how can i study triangles?

(14:32:04) dr.math: Just a sec. I'm recording these conversations, is that ok with you?

(14:32:51) Giraffe: yeah, why u record it?

(14:33:18) dr.math: For research and quality purposes. If this dr.math is successful we may start dr.science, etc.

(14:34:10) Giraffe: What did my friend ask u ths mrning- she had m fne?

(14:34:17) dr.math: so my coworkers and boss, etc, read through the log files just to see how everything is going

(14:34:38) dr.math: so we keep the conversations clean. And I don't know who yur friend is

(14:35:09) Giraffe: she chatted on my phne. what did she ask u?

(14:36:20) dr.math: well, not that I necessarily believe everything I read from MXit, but whatever she or you said was not appropriate.

(14:36:29) dr.math: Anyway let's drop it. what do u need to know about triangles.

RESULTS

At the time of writing this paper, we do not have any hard numerical data on whether any of the participants in *Math on MXit* actually increased their marks in mathematics or not. We do, however, have conversations with numerous learners which indicated that we had, indeed, helped the learners:

(15:08:32) daisy: do u have any tips 4 me on (veelterme en polinome)?

(15:09:07) dr.math: sure. what's the problem that you seem to be having?

(15:10:26) daisy: no problems jus were writing a test on wednesday jus wanet 2 knw if u hav tips?

(15:10:57) dr.math: OIC. well, not really....

(15:11:43) daisy: nt but ure a computer and do u have any help of sme kine 4 me on that?

(15:12:19) dr.math: will it be covering the roots of the formula, or plotting the formula, we can do some exercises and test questions...

(15:13:38) daisy: ok that would be nice!

------- the next day -------

(14:22:09) dr.math: how was your math test?

(14:22:55) daisy: it was kind of easy 4 me just hope i get gud marks!

(14:23:06) dr.math: that's great. what did it cover?

(14:23:48) daisy: veelterme and smeting like that!

(14:18:41) Lock: I passed math!

(14:19:18) dr.math: WONDERFUL!! that's great.

(14:19:59) Lock: Lol well i knew i'd pass.. mark isn't up to standard but i'll live

(14:20:11) dr.math: good.

THE WAY FORWARD

Learners have asked us to set up more MXit based "help lines" for help in other subjects. This technique of using MXit to help learners is, obviously, not limited to mathematics. This technique would work equally well for help with science or accounting. However, the technique would not work for any language based courses such as English, Afrikaans, or Zulu. This is because of the abbreviated language used on MXit and the terrible spelling employed.

Another task we have on our "to do" list is to implement a computer networking solution so that we can allow tutors to log in from remote sites without exposing the minor children's cell phone numbers on remote computers. Currently, all tutors must

come into our offices (in Pretoria, South Africa) and the log files of the conversations with the children are secured on our computers. This, obviously, limits the pool of volunteer tutors which we can use. We have had numerous offers of volunteers – even as far away as the UK – and we have plans to take advantage of those offers as soon as the security of the minor children's cell phone numbers can be secured.

CONCLUSIONS

Our *Math on MXit* project was, and still is, successful in helping learners with their mathematics homework in the afternoons. The cost to the participants was minimal. From a learners' points of view, the entire conversation may cost, at most, R1.00. From the tutors' point of view, the cost was the tutors' time and the internet connectivity. Only free open source software was used on the tutors' workstations. MXit software on the cell phones is free of charge.

Learners showed a real eagerness to engage in conversation with an adult. Despite the fact that we made a concerted effort not to reveal any personal data about the tutors, learners rightly assumed that the tutors were adults and treated us as such. Once we made it clear on the ground rules that we would not tolerate foul language and sexual content, most participants were extremely polite when dealing with us.

Besides discussing mathematics, we ended up also discussion other academic topics such as university entrance requirements, tests in other classes, and wishes and dreams of future education. Many participants asked for counseling. We were not in a position to help such learners and we tried referring them to favourite teachers, scout leaders, or Sunday School teachers.

We can highly recommend this medium of communication with teenagers over a wide scope of topics. Besides schools, other organisations such as church groups, youth clubs, and counseling organisations could be able to use this medium. The one topic which would not really be appropriate would be language education because of the abbreviated form of communication and the creative spelling.

Teachers who do not wish to go to the effort of setting up a service like this are free to refer their learners to our service.

The medium really is the message.

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