An M-Support Project was carried out by the Nursing Department at North Tec in Whangarei, New Zealand. The findings from the associated research indicate that m-support is an acceptable, cost-effective form of support to motivate, encourage and communicate with nursing students in primary health care clinical placements.

1 Introduction
The use of electronic and mobile technologies to support students in education settings is increasing. This paper describes a pilot project using short message service (SMS) to m-support nursing students in clinical placements. The associated research is also presented. According to James and Bailey (2002) m-support is the provision of support for the mobile student.

2 Background
2.1 M-Support by SMS
The use of SMS via cell phones is now an accepted part of everyday social communication. In New Zealand the ownership of cell phones is on the increase, especially in younger people. Census at School New Zealand (2005) states that 84% of 14 year old children who took part in their 2005 online survey owned their own cell phone. This was an increase of 25% from 2003. It is likely that this upward trend will continue.

In education mobile technology incorporating SMS is being used as a form of asynchronous communication with students. Some field experience demonstrates success in this area. Horstmanshof (2004) was successful in using SMS to develop a sense of connection and community with first year university students. Although there are limits to using SMS as a key form of support for students, research does suggest its importance in some situations (Gaskell & Mills, 2004). Nursing students in primary health care clinical are placed in a unique situation. It was anticipated that m-support through SMS would be beneficial to students; therefore a pilot was undertaken by the Nursing Department at North Tec during 2006.

2.2 North Tec
North Tec (NT) is a rural polytechnic. Characteristics of the region served by NT include a higher percentage of Maori than the national average; a high level of socio-economic deprivation; a dispersed rural population with accessibility to services negatively influenced by geography and poor transport infrastructure. A key objective for North Tec is to reduce these barriers and increase access to education for students across Northland by promoting flexible learning development.
The use of technologies is also being increasing used in nursing education to support student learning. The Nursing Department at North Tec is actively developing modules to promote flexibility (Institute of Technology and Polytechnics of New Zealand, 2005).

3 Primary Health Care Nursing

The Primary Health Care Nursing Module was seen as a key target for m-support because of the nature of the clinical module. This module is offered to second year Bachelor of Nursing students. Student nurses are placed in a variety of clinical placements including General Practice; Public Health, Maori Health Provider, District Nurse and others. Students are mentored by nurses working for those organizations but are also supported by a North Tec nursing lecturer.

There are barriers to effective support of students in these placements. Geographical dispersion make it difficult to support students placed in rural areas. For example, it takes around 3 hours to travel from North Tec (Whangarei) to Kaitaia one way. The nature of primary health care nursing also means that students are often out and about in the community. This makes communication and meetings between the lecturer and student difficult to arrange. In addition many placements such as medical centres are very busy and contacting the student by land line places extra pressures on staff and may interrupt patient care.

During the five week clinical block the lecturer facilitates student learning by supporting students in their formative work. This process is assisted by tutorials, formative activities including reflective work and one to one communication between lecturer and student. A student’s summative assessment is on meeting clinical standards. The inclusion of e-learning promotes flexibility for students and the lecturer. An example of this is the student’s ability to post reflective logs and complete reflective exercises on-line. These are then marked and comments posted for students to view. This process works very well.

4 The M-support Project

The goal of the M-Support Project was to introduce a system which provided m-support for students enrolled in primary health care nursing through the SMS facility on cell phones. M-support introduces technology into the clinical environment to support nursing students which promotes flexibility beyond that offered through current e-learning resources.

4.1 Considerations for the M-Support Project

Several factors and assumptions were considered before this m-support project commenced:

- The personal nature of a cell phone means that it is usually close to the owner on a continuing basis and is not reliant on the location of the user.
The SMS function can be utilized as an asynchronous form of communication with a student. The assumption based on previous experience (Horstmanhof, 2004) was that this could foster a sense of connectivity between the lecturer and student and facilitate a supportive learning environment.

A key aspect of SMS in comparison to other uses of a cell phone is the cost. Currently this is 20 cents or less per message.

SMS can promote flexibility in communication for both students and their lecturer in time and place.

Incorporating this technology into education moves what has essentially been a private and informal form of communication into a more public and formal context. The assumption was made that this might be a concern for students.

Software has become available to support the SMS function on cell phones. The utilization of eTXT telecommunication technology provides an interface between institutional and personal technologies. ETXT and the SMS Composer software utilized for this project were those provided by Telecom (information on this technology is available at http://www.telecom.co.nz).

4.2 Project Details.
This M-Support Project was piloted during 2006. M-support was provided through SMS to motivate, support and communicate with student nurses placed in a range of primary health care placements across Northland. Forty-one students took part in this project. Ages ranged from 18 to 56 years; the average age was 31 years.

The use of telecommunication technology facilitated this project. The software utilized is SMS composer. ETXT allows SMS communication from a personal computer to the student’s cell phone. It combines email and text, to send messages to individuals or groups. A key advantage of eTXT is the ability to type on a computer keyboard without resorting to cumbersome texting on a phone keyboard. A student’s response to an SMS message sent via eTXT, returns in email via Outlook. After loading the software an SMS function appears on the Outlook toolbar. If students are preloaded as a distribution list it is an easy matter to select this list through SMS composer, type a message and send out to students via eTXT. Messages of up to 160 characters are possible.

4.3 M-Support Criteria
The value of the project was assessed by the extent to which ‘m-support’ criteria were achieved. For the purpose of this pilot and the associated research ‘m-support’ was defined and assessed through the following criteria:

1. Students reporting that it helped them to feel supported and that it motivated them in completing assigned work in their workbook.
2. Communication between lecturer and student was enhanced, including the scheduling of meetings.
3. Flexibility in communication (regardless of time and place) between lecturer and student was enhanced.
4. Students’ acceptance of personal technology for communication between lecturer and student.
5. Cost was not prohibitive (within the resources of students and North Tec).
5. Research

5.1 Methodology
This study was informed by evaluation research in which the purpose is to assess the value of a program or service to its recipients (Casswell, 2003). A mixed method of survey research, quantitative data from eTXT and cell phone message history, and qualitative data from a lecturer’s field notes was used to assess the value of the project.

5.2 Research Findings
Student Survey
Thirty-one students returned questionnaires (76%). Likert scales were used to find out student perceptions of eight statements related to the M-Support Project (see Table 1.).

Support, Motivation and Communication
Five statements were around support, motivation and communication. It appeared that students did feel supported in their placement (strongly agree, 77%; agree, 20%). Slightly less strong agreement was obtained for the question about feeling motivated to complete assigned work as a result of m-support (strongly agree, 53%; agree 37%). There was strong agreement for statements around communication. Statements were about scheduling meetings (strongly agree, 71%; agree 29%), flexibility of communication (strongly agree, 77%; agree 23%) and communication in general (strongly agree, 68%; agree 29%) (see Table 1.).

Student Comfort, Affordability for Students and Standard Support.
The remaining statements posed to students were around comfort, affordability in future and the use of SMS as a standard form of support. One statement asked for students’ perceptions of utilising personal technology (cell phones) in education. Students had to respond to a statement about feeling comfortable receiving texts on their personal cell phone. This statement obtained one of the most positive responses with most students in strong agreement (strongly agree, 77%; agree, 23%) (see Table 1.). This was a surprising result in view of the assumption that this could be an issue for students.
Table 1: Student perceptions of m-support.

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not Sure</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text messages from my lecturer helped me to feel supported by the lecturer during my clinical placement. n=30</td>
<td>23 77%</td>
<td>6 20%</td>
<td>1 3%</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Text messages from my lecturer helped to motivate me to complete the assigned work in my workbook. n=30</td>
<td>16 53%</td>
<td>11 37%</td>
<td>2 7%</td>
<td>1 3%</td>
<td>0 0</td>
</tr>
<tr>
<td>Text messages between my lecturer and myself helped with scheduling face to face or phone interviews. n=31</td>
<td>22 71%</td>
<td>9 29%</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Text messages helped the communication between my lecturer and myself. n=31</td>
<td>21 68%</td>
<td>9 29%</td>
<td>0 0</td>
<td>1 3%</td>
<td>0 0</td>
</tr>
<tr>
<td>Text messages promoted flexibility by enabling communication with my lecturer regardless of time and place. n=31</td>
<td>24 77%</td>
<td>7 23%</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>I feel comfortable receiving text messages from my lecturer on my personal cell phone. n=30</td>
<td>23 77%</td>
<td>7 23%</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Text messaging should be introduced as a standard form of support for nurses in primary health care nursing placements. n=30</td>
<td>24 80%</td>
<td>3 10%</td>
<td>2 7%</td>
<td>0 0</td>
<td>1 3%</td>
</tr>
<tr>
<td>I could afford the financial cost of text message communication in other clinical placements. n=31</td>
<td>12 39%</td>
<td>8 26%</td>
<td>5 16%</td>
<td>1 3%</td>
<td>5 16%</td>
</tr>
<tr>
<td>Total</td>
<td>165 66%</td>
<td>60 26%</td>
<td>10 4%</td>
<td>3 1%</td>
<td>6 3%</td>
</tr>
</tbody>
</table>

It was perceived that the cost of texting could be an issue for students in future. Students were asked to respond to a statement about being able to afford the cost of text messaging. This statement obtained the most varied responses, although the majority of students were in agreement (strongly agree, 39%; agree 26%). In contrast to student perceptions, later analysis of messages demonstrated that the cost per student per clinical block is very low; less than two dollars per student.

A further statement elicited the students’ perceptions of the usefulness of text messaging in future clinical placements. Students were asked to respond to a statement about introducing this type of support as standard practice. Ninety percent strongly agreed or agreed (see Table 1.). Overall, when all responses from students were considered it was apparent that they were very positive about the m-support project (strongly agree, 66%; agree 26%).
Text Message History
Microsoft Outlook enabled text messages to be saved and later counted and analysed to determine the use, the nature and the cost of the SMS Messages. These included messages sent and received via eTXT or the clinical cell phone.

Sent Messages to Students
During the two clinical blocks in total 541 messages were sent out to students. The majority of messages were sent via eTXT from Outlook. The messages were often sent with text language to ensure messages remained within 160 characters. Three hundred and ninety-four (73%) were original messages. The remaining 147 (27%) were responses to student texts. Of the originals sent out to students 277 (70%) were sent as part of a group SMS message. Messages were counted and sorted into themes. The predominant themes in sent group messages were on motivating students to complete the formative work set out in their workbook (36%) or to attend and prepare for tutorial discussion (37%) (see Table 2.). However there were mixed themes in many messages.

Table 2: Sent SMS messages

<table>
<thead>
<tr>
<th>Sent SMS Messages</th>
<th>Originals to students</th>
<th>Responses to students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break down of originals to students</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Individual</strong></td>
<td><strong>N=394 (73%)</strong></td>
<td><strong>N=147 (27%)</strong></td>
</tr>
<tr>
<td><strong>Meet</strong></td>
<td><strong>n=117 (30%)</strong></td>
<td><strong>n=277 (70%)</strong></td>
</tr>
<tr>
<td><strong>Motivate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Meet</strong></td>
<td><strong>100 (86%)</strong></td>
<td><strong>100 (36%)</strong></td>
</tr>
<tr>
<td><strong>Motivate</strong></td>
<td><strong>5 (4%)</strong></td>
<td><strong>102 (37%)</strong></td>
</tr>
<tr>
<td><strong>Support</strong></td>
<td><strong>7 (6%)</strong></td>
<td><strong>16 (6%)</strong></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td><strong>5 (4%)</strong></td>
<td><strong>59 (21%)</strong></td>
</tr>
</tbody>
</table>

The following are examples of a group message sent to students under the theme motivate but is also a mixed message. “R U settling in OK? This wk get to know routine & people. Do learning obj. Show wkbook 2 staff. Reply 2 this txt tell me how u r doing. ☺”. The predominant theme in individual messages was on arranging face to face meetings (86%) (see Table 2.). An example of an individual sent message under the theme of ‘meeting’ was “Got your care-plan, looks good. Can I come and see u tom Wed at 1230pm? ☺.

Received Messages from Students
In total 236 messages were received from students. Eighty-eight percent of messages were in response to messages sent to them. These responses came through Microsoft Outlook via eTXT. The only original messages came via the clinical cell phone. The majority of messages received related to responses to messages regarding meetings (51%) with students or on their progress (22%) (see Table 3.).
Table 3: Received SMS messages

<table>
<thead>
<tr>
<th>Received SMS Messages N=236</th>
<th>Clarify</th>
<th>Tutorial</th>
<th>Meeting</th>
<th>Progress</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29 (12%)</td>
<td>18 (8%)</td>
<td>120 (51%)</td>
<td>53 (22%)</td>
<td>16 (7%)</td>
</tr>
</tbody>
</table>

Examples of student texts were “Just saw yr message, yea that sounds great I’ll c u at 3.30pm on Monday with my work.” Another example was “Thanks 4 ur inquiry. Am loving it. Wonderful. Removed stitches on 2 pts already n done dressings 2!”

Costs of the SMS Project
A costing exercise estimated the potential costs for future students and for North Tec. For the purpose of this costing exercise an assumption was made that students pay 20 cents per text message. The average cost of participating in m-support was $1.40 per student per clinical block. For NorthTec, a SMS message sent via eTXT costs 10 or 17 cents a message depending on the telephone carrier company. A breakdown of messages sent per student and eTXT fees (12 months) estimated the average cost for m-support at $4.66 cents per student per clinical block. The costs of m-support appear to be within the resources of students and North Tec.

Field Notes
Ease of communication, flexibility and connectivity with students were the major themes arising from field notes. The major perception from the lecturer’s perspective was that of ‘ease of communication’. Messages sent via eTXT enabled contact to be initiated with students with ease via Microsoft Outlook using a preloaded list of students and a keyboard. Connectivity to students was enhanced. There was a feeling that each student felt like they were being contacted directly. There were also no qualms about contacting students knowing that there would be less interruption to the workplace or students work with clients”. The system also enabled flexible and efficient use of time. Work email could also be accessed and SMS messages sent from a home computer. The lecturer’s experience of m-support was very positive.

6 Discussion and Implications
The findings of the research indicated a high level of success of the M-Support Project. There are indicators that it will continue to be acceptable for students and affordable for both students and North Tec despite students having concerns about cost.

Students did feel supported by the SMS messages and motivated to complete assigned work in the workbook. This supports the initial confidence in m-support from the field (Horstmanhof, 2004) and the literature (Gaskell & Mills, 2004). Communication with students was enhanced by the messages, especially regarding the scheduling of meetings. Flexibility in communication (regardless of time and place) for the lecturer and student was enhanced. Student acceptance of personal technology to aid communication was very high and cost was not a prohibitive factor. It was within the resources of both students and the polytechnic.
Within the context of the clinical module (primary health care nursing) offered at North Tec it is recommended that the SMS project be continued as standard practice for future clinical modules. This pilot and associated research may also have lessons for nurse educators nationally and internationally, especially in supporting students in the field. The use of SMS and eTXT as a form of student support could also be investigated for use in other areas such as at the start of tertiary education experience to aid retention. Further research is required to investigate future applications in educational settings.

The goal of the M-support project was to introduce a system which provided m-support for students enrolled in primary health care nursing through the SMS facility on cell phones. The research results indicated that this pilot was very successful in achieving this goal. M-support offers a complementary, cost effective and acceptable form of support for students in the field.

References


