A Study of Personal Digital Assistants to Enhance Undergraduate Clinical Nursing Education

Judy Miller, PhD, RN; Julia R. Shaw-Kokot, MSLS; Martha S. Arnold, MEd; Tevin Boggin, BS; Karen E. Crowell, MLIS; Francesca Allegri, MLIS; Janet H. Blue, MA; and Stephanie B. Berrier

ABSTRACT

This study reports on personal digital assistants (PDAs) as a means to prepare nurse professionals who value and seek current information. An interdisciplinary team of nursing and library faculty, information technology and bookstore staff, students, and educational consultants developed this project. A pre-post and comparative group design of second-degree students in the accelerated and traditional baccalaureate nursing degree (BSN) options was used to examine students’ information-seeking behaviors, and the effectiveness and cost of innovation strategies associated with incorporation of PDAs into students’ clinical practice. Results of this study support PDAs as an effective student learning resource, especially for reference materials. The student group with PDAs had increasing numbers of questions associated with clinical situations and a greater recognition of the need to use current resources. Students made substantial use of their PDAs and health team members, while decreasing reliance on textbooks and clinical faculty. Students’ use of and satisfaction with this technology is linked to access speed and readability. Providing faculty with PDAs is recommended to enhance their comfort with and incorporation of PDAs into clinical teaching.

This article reports on personal digital assistants (PDAs) as a means to prepare competent nurse professionals who value and seek current information. Through the incorporation of PDAs in undergraduate clinical courses, it is anticipated that the value and skill of seeking current information will become a routine that nursing students take into their professional practice. An interdisciplinary team of nursing and library faculty, information technology and bookstore staff, students, and educational consultants sought to answer the following questions:

- How does students’ use of PDAs affect their information-seeking behavior in the clinical setting, particularly the type of knowledge sought and engagement with faculty?
- How do clinical faculty view students’ use of PDAs as related to clinical performance and knowledge use?
- What factors need to be considered in the selection of the PDA hardware and software to provide students with useful information systems?
- What are the components and cost of an effective PDA support program?

BACKGROUND

The use of mobile technologies by health care providers is rapidly increasing. Mobile technologies include PDAs, computer tablets, and other devices that can be easily carried and provide ready access to information. PDAs are
the most frequently used of these technologies, and they can provide students with information relevant to clinical learning, such as diagnostics, medical terminology, and drug references.

Although PDAs are beginning to be used in nursing practice and higher education, their use has primarily been at the advanced practice level or limited to enhancing access to pharmacology resources (Fallon, 2002; Huffstutler, Wyatt, & Wright, 2002; Peterson, 2002). Nurses report using the devices within the practice settings of home health (Brian & Jamieson, 2002), schools (Suszka-Hildebrandt, 2001), nursing homes (Edwards, 2001), and hospitals and outpatient clinics (Hassett, 2002). Some uses of PDAs reported in the literature include pain tracking and documentation (Platt & Reed, 2001), tracking medication administration (“Medication Errors,” 2002), supporting preference-based care planning (Platt & Reed, 2001; Ruland, 2002), and research (Weber & Roberts, 2000). Advantages of PDAs include time savings, reduction of errors, and ease and acceptability of seeking information while with a patient, while issues related to their use include information security, lack of a standard platform, finding quality software, and cost of the devices and software.

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METHOD

Design

A pre-post and comparative group design was used to answer the study questions. Second-degree students entering the 14-month accelerated baccalaureate nursing degree (BSN) option were required to purchase PDAs, while second-degree students in the 24-month BSN option served as the comparison group. Second-degree students were selected for this study because they did not have the undergraduate expense of the laptop requirement. The two student groups had the same program objectives, but there are differences in some courses and course sequences, a limitation of the study.

This study was designed to involve at least three clinical courses across the educational program. Exempt status was obtained from the Institutional Review Board, as the study was considered the testing of an educational program. Course syllabi contain explanations about student rights and testing of educational innovations in courses. Student participation was voluntary, and confidentiality was maintained.

Instruments

Program evaluation measures were developed by a five-member subgroup of the team. Formative evaluative measures were used to identify needed program adjustments during this study and for future expansion. Measures included:

- Pre-post comparison of second-degree students’ information-seeking behaviors.
- Time involvement of the information technology support staff with preparation of the PDAs, orientation sessions, and ongoing student support.
- Student evaluation of the PDA orientation sessions and support.
- Faculty interviews regarding student use of the PDAs.
- Student use of the PDAs.

The information-seeking behavior survey was developed by three of the investigators, whose backgrounds included expertise in the content area and educational testing (J.M., M.S.A., K.E.C., F.A.). Information-seeking behaviors included perceptions of information currency, pursued information sources, and knowledge about the security of information retrieved.

The 18-item survey, which could be completed in less than 10 minutes, was independently reviewed by the team for clarity and face validity. It was distributed prior to introduction of the PDAs and repeated midway through the 14-month option.

Incorporation of PDAs into the students’ educational program was a multi-step intervention by the interdisciplinary team involving:

- Selection of software and Web-based programs most supportive of the BSN program and clinical courses objectives.
- Student and faculty orientation to the PDAs.
- Provision of support services to faculty and students.
- Program evaluation.

Selection, Purchase, and Installation of Software and Devices

The Palm OS was selected as the required platform, based on the widespread availability of the software and affordability of Palm devices. The team of investigators required a standard model to provide adequate technical support and shared sync stations in computer laboratories. Students were asked to purchase either Palm Model M515 or M310 devices with 8 MB of memory expandable to up to 64 MB. The required PDA models were selected to support the use of selected documents associated with clinical learning activities. A document reader/converter program, Documents to Go®, came packaged with the Palm devices. Students had the option of purchasing the
PDA and software privately or through a discount at the Health Affairs bookstore.

The PDA interdisciplinary team selected the type and timing of introduction of the software to be consistent with the students' learning needs and to avoid information overload. For example, Epocrates Rx® is an excellent, economical drug reference but includes additional information more appropriate to prescribing functions. Students started their clinical experience with Davis Drug Guide® software, which focuses on the basics of medication administration, and Taber’s Cyclopedic Medical Dictionary®. Later in the semester, Epocrates was added for its trade name and costing capabilities. To protect data, two security programs were required: SignOn® and BackupBuddy®. With the Medical Abbreviations and Medical Spanish programs, a free version of iSilo® was necessary. Table 1 lists the sources, memory, and costs of the required software.

Although the team's goal was to provide PDAs to students with the software already installed, problems arose related to payment. Most PDA software is marketed for individual purchase by credit card and is distributed through Internet download. Since the team did not have a method to receive reimbursement for Internet software, students had to download and install the software on their own.

### Plan for Phased Introduction and Orientation with Students

Results from a 2001 survey of students' computer skills was used in the design of the introduction plan (Miller & Koyanagi, 2001). According to the survey, students enter the nursing program with at least basic technology skills, home computers, and having accessed the Internet a minimum of one to three times per week (Miller & Koyanagi, 2001). Eighty-one percent of the students did not have a PDA prior to beginning the 14-month option. Phased introduction of the PDAs included orientation, support documents, ongoing support, and practice with the PDA as part of case studies in the classroom and laboratory prior to use in the clinical setting.

The orientation package was guided by an appreciation of students' financial constraints and time limitations, as well as a desire to provide students with options. PDA costs qualified for student aid because they were required for the course. During interviews, potential students learned about the importance of technology in nursing and computer access. The admission letter included the importance of current information to the practice of professional nurses. The PDA was described as a clinical learning resource with contact information provided for questions. Students could purchase PDAs from the Health Affairs bookstore, with the software loaded by information technology staff, or buy and load the software themselves. Thirty-five (92.1%) of the students chose the bookstore package option.

The PDA orientation session was scheduled several weeks into the nursing program to give students time to get comfortable with their courses. The 1½-hour session began with distribution of the PDAs, which had the software icons arranged to reduce search time. Team members demonstrated the applications using clinical examples specific to a concurrent class on elimination. Students used their PDAs to find the Spanish word for pain and the normal value for urine specific gravity, and to define dysuria.

Students were to become familiar with their PDAs and download selected programs during the 2-week summer clinical experience. This was designed to prepare students for the heavier, required use of the PDA in the acute care clinical experience scheduled for the fall. Students were encouraged to contact the team with problems. Most difficulties involved downloading software programs, particularly AppUsage®, which recorded PDA use. Despite successful piloting, this program failed for the majority of students' computers.

Formative evaluation data from the summer orientation survey was used to design fall support activities. The

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**TABLE 1**

<table>
<thead>
<tr>
<th>Title</th>
<th>Source</th>
<th>Memory</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>DrugGuide</td>
<td>University Health Affairs Bookstore</td>
<td>4 MB</td>
<td>$49.95</td>
</tr>
<tr>
<td>Taber’s Cyclopedic Dictionary</td>
<td>University Health Affairs Bookstore</td>
<td>4 MB</td>
<td>$49.95</td>
</tr>
<tr>
<td>Med Lab Ref</td>
<td>Shareware (PalmGear)</td>
<td>16 KB</td>
<td>$10.00</td>
</tr>
<tr>
<td>Medical Abbreviations</td>
<td>Freeware (Freeware Palm)</td>
<td>35 KB</td>
<td>Free</td>
</tr>
<tr>
<td>Medical Spanish</td>
<td>Freeware (pdaMD)</td>
<td>35 KB</td>
<td>Free</td>
</tr>
<tr>
<td>Backup Buddy</td>
<td>Bluenomad</td>
<td>3.25 MB</td>
<td>$29.95</td>
</tr>
<tr>
<td>Sign On</td>
<td>Communication Intelligence Corporation</td>
<td>74 KB</td>
<td>$19.99</td>
</tr>
<tr>
<td>Isilo free</td>
<td>Isilo</td>
<td>47 KB</td>
<td>Free</td>
</tr>
<tr>
<td>AppUsage</td>
<td>Benc Software</td>
<td>19KB</td>
<td>$12.50</td>
</tr>
</tbody>
</table>
survey indicated that students continued to try to solve problems on their own, rather than contact the team. The team’s goal was to minimize the time and effort students invested in learning to use the PDAs. Thus, a “15-minute rule” was introduced: students were to spend no more than 15 minutes trying to solve a PDA problem before contacting the team. Individual assistance was also offered by the team as part of the fall course orientation, with 2 days of “drop-in” times, used by approximately half of the students. During the first class, students used their PDAs with case studies. The PDA was also incorporated into the medication administration skill taught in the laboratory. Therefore, students had further practice with the PDA and reinforcement of its use in nursing practice prior to beginning the fall clinical experience.

Faculty Orientation and Involvement

Faculty involvement began with an invitation to course coordinators to become members of the planning team; four of them accepted. Regular attendance by faculty was difficult to achieve, so periodic updates about the PDA project were provided to course coordinators of both program options. Clinical faculty were oriented to the purpose and use of the PDAs through course meetings held at the beginning of the semester. Unfortunately, because of budget cutbacks, PDAs could not be provided to faculty. Sessions emphasized how faculty did not need to understand the operation of PDAs to facilitate student learning. According to the results of this study, faculty may have been reluctant to encourage PDA use because of their lack of experience with the technology. Faculty were asked to redirect students with questions about terminology, laboratory tests, or medications to their PDAs during the clinical experience. Faculty and students were asked to view the PDA as they would a stethoscope, required to be with them, not stored in a locker.

RESULTS

Students’ Information-Seeking Behaviors

Caution is advised when comparing the information-seeking behaviors of students in the 24-month and 14-month options because of the possible effect of differences in course sequences (in addition to the PDA intervention). Given the relatively small groups and to ensure confidentiality, matching of students with the use of change scores was not performed. Therefore, it cannot be assumed that students who completed the pre-intervention surveys were the same students as those who completed the post-intervention surveys. Participation was notably higher among students in the 14-month group, with 97% completing the pre-intervention survey and 74% completing

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Frequency of Student Information Seeking</th>
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<tbody>
<tr>
<td>Frequency of Information Seeking</td>
<td>Pre-Intervention Survey</td>
</tr>
<tr>
<td></td>
<td>14-Month Group</td>
</tr>
<tr>
<td></td>
<td>(N = 38)</td>
</tr>
<tr>
<td></td>
<td>(n = 37, 97%)</td>
</tr>
<tr>
<td>Once per month or less</td>
<td>13.5%</td>
</tr>
<tr>
<td>Once per week</td>
<td>24.3%</td>
</tr>
<tr>
<td>Several times per week</td>
<td>37.8%</td>
</tr>
<tr>
<td>Once per day</td>
<td>16.2%</td>
</tr>
<tr>
<td>Several times per day</td>
<td>8.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE 3</th>
<th>Expected Currency of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>What I learn now will be outdated in:</td>
<td>Pre-Intervention Survey</td>
</tr>
<tr>
<td></td>
<td>14-Month Group</td>
</tr>
<tr>
<td></td>
<td>(N = 38)</td>
</tr>
<tr>
<td></td>
<td>(n = 37, 97%)</td>
</tr>
<tr>
<td>1 to 3 years</td>
<td>16.2%</td>
</tr>
<tr>
<td>3 to 5 years</td>
<td>43.2%</td>
</tr>
<tr>
<td>5 to 10 years</td>
<td>27.0%</td>
</tr>
<tr>
<td>10 to 15 years</td>
<td>10.8%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

Faculty involvement began with an invitation to course coordinators to become members of the planning team; four of them accepted. Regular attendance by faculty was difficult to achieve, so periodic updates about the PDA project were provided to course coordinators of both program options. Clinical faculty were oriented to the purpose and use of the PDAs through course meetings held at the beginning of the semester. Unfortunately, because of budget cutbacks, PDAs could not be provided to faculty. Sessions emphasized how faculty did not need to understand the operation of PDAs to facilitate student learning. According to the results of this study, faculty may have been reluctant to encourage PDA use because of their lack of experience with the technology. Faculty were asked to redirect students with questions about terminology, laboratory tests, or medications to their PDAs during the clinical experience. Faculty and students were asked to view the PDA as they would a stethoscope, required to be with them, not stored in a locker.

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Students in the 24-month option were fairly consistent in their level of participation, with 46% completing the pre-intervention survey and 50% completing the post-intervention survey.

The majority of students in both options were active seekers of information. As shown in Table 2, at the beginning of the study, the 14-month students reported seeking information less frequently (with 62.1% seeking information several times per week or more often) than those in the comparison group (81.0%). During the semester, 43.0% of the 14-month students and 22.0% of the 24-month students reported an increase in the number of questions associated with the clinical experience, compared to a decrease in the number of questions for only 11.0% of the 14-month students and 67.0% of the 24-month students. In addition, during the semester, information seeking on topics of interest declined for both groups, with the greatest decline among the 14-month students.

At the beginning of the study, both groups were fairly similar in their belief that what they learn now will be outdated in 5 years or less (59.4% of 14-month students, and 57.1% of 24-month students (Table 3). By time they completed the post-intervention survey, this belief increased to 79.0% for the 14-month students and 61.0% of the 24-month students.

Students were asked to compare their use of learning resources from the first weeks of the fall clinical experience to their last clinical days. Both groups increased their use of health team members and journals, and maintained a fairly constant use of the clinical agencies’ procedure man-

### Table 4: Personal Digital Assistant Difficulty with Tasks: Prior to Fall Semester

<table>
<thead>
<tr>
<th>Task</th>
<th>Average Level of Difficulty*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature recognition</td>
<td>2.25</td>
</tr>
<tr>
<td>Hooking up cradle with computer</td>
<td>1.82</td>
</tr>
<tr>
<td>Downloading applications</td>
<td>1.63</td>
</tr>
<tr>
<td>Navigating within programs</td>
<td>1.26</td>
</tr>
<tr>
<td>Mechanical failure (e.g., not working, battery failed)</td>
<td>.93</td>
</tr>
</tbody>
</table>

* 1 = no difficulty to 4 = very difficult.
uals and care plans, and use of the Web. The groups differed in their comparative use of other information sources. Among the 24-month students, 39% reported an increased use of textbooks as the initial information source, and 11% reported decreased use with the last clinical days. In comparison, 11% of the 14-month students reported an increased use of textbooks and 39% used textbooks less often as the initial source for answers to clinical questions.

During their last clinical days of the semester, 57% of the 14-month students reported using their clinical faculty less often as the first choice of information for clinical questions, compared to 39% of the 24-month students. The 24-month students increased their use of fellow students for information during the first clinical semester (44%), whereas this resource remained relatively constant among the 14-month students (57%). As shown in the Figure, students in both groups increasingly recognized the importance of credibility in guiding their selection of information, but convenience decreased in importance a great deal for the 14-month students.

Components of an Effective PDA Support Program

A survey was distributed near the end of the first semester for students to evaluate the orientation program and their comfort with the PDA (response rate = 87%). Students indicated that they had experienced some difficulties but also that they did not use available resources. Their responses guided the team in designing the help options. Of six types of support options, the students preferred help via e-mail or telephone, group sessions early in the program, and user guides. Only 3 students contacted a member of the team for help, whereas 14 went to fellow students or friends.

As shown in Table 4, students did not have significant difficulties with loading and using their PDAs. The highest reported difficulty was with the additional security requirement and getting the PDA to recognize the student’s signature. Following the orientation session, 9 of the 33 respondents (27.3%) used their PDAs five or fewer times, with 10 students (30.3%) accessing their PDA 6 to 11 times, and 14 students (42.4%) using their PDA at least 20 times. This use excluded activities to prepare the PDAs and load the programs.

Students recommended that more time and assistance was needed for downloading programs and helping them better understand how to set up their home computers. Because of the unanticipated attendance of all students at one of the orientation sessions, time for these demonstrations and discussions was severely limited. Despite the provision of written materials and addresses for PDA support, students were frustrated.

PDA support for students was primarily provided by two team members. The director of the school’s information technology support center (J.H.B.) spent 30 hours on the PDA study, spanning the team's planning meetings, initial investigative work, and preparation for the PDA distribution and student training. The initial setup averaged 2 hours of support time per PDA. This time investment may change in the future, decreasing with greater familiarity with the setup requirements, but increasing if all programs are preloaded. Training and student support involved 13.0 hours of staff time during the summer and 40.5 hours during the fall.

Factors Related to Software and Hardware Selection

As noted above, PDA use was to have been measured via AppUsage software. However, its use was discontinued because of inaccurate reports, error messages, and lack of vendor support. Limitations of PDA hardware noted by students and faculty included the small screen size, requirement to reformat documents, and concerns about theft. Midprogram survey results included students’ concerns about the number of times the PDA “crashed” and its slowness and complicated use, compared to textbooks, as well as recommendations for a lower cost model of PDA. Documents to Go software for reformatting Word documents was included in the hardware package, but additional editing is required for optimal readability on a small screen.

Student Use of PDAs

A survey of student PDA use was developed after the failure of the AppUsage software. The survey specified a 4-day period during the fall semester to represent stu-
The students made substantial use of their PDAs and health team members, while decreasing their reliance on textbooks and clinical faculty for answers.

Students' clinical activities. Students completed the survey the week following the specified recall period. A weakness of this study is its reliance on student recall. Thirty-six students (92%) completed the survey. The majority of students (78%) believed the survey period was representative of their typical PDA use. Of the remainder, equal numbers of students (\( n = 4 \)) reported use during the specified time period as either more or less than usual.

Students were regular users of their PDAs: 53.0% used their PDAs several times per week, with an additional 41.0% accessing their PDAs at least once per day. Only 2 students (5.6%) reported using their PDAs once per week or less. The PDA applications used most, in order of frequency were the medication resources, medical dictionary, calendar, and address/telephone book. Student use of their PDAs as the first choice for answers to clinical questions was reported on the post-intervention survey at approximately the same level (61.0%) as during the first weeks of the fall clinical experience, with the 11 remaining students split between either increasing or decreased their PDA use.

Students' evaluation of the usefulness of the PDAs for knowledge during the survey period was mixed. The resources of the PDA were reported as useful or extremely useful in answering their most recent clinical or nursing question by 81% of the students. In terms of overall efficiency, effectiveness and cost/benefit of the PDA in obtaining information, student responses were more widely distributed. As shown in Tables 5 and 6, only 48% of the students evaluated the PDAs as extremely useful or useful, and 51% indicated PDAs were not worth the expense.

The cost/benefit question must be interpreted with caution, as students were asked to check all answers that applied, and their responses indicated a much higher use of laptops in the classroom than was actually observed. Student comments included concerns about the number of times the PDA “crashed,” its slowness and complicated use, compared to textbooks, and the need for the keyboard so documents could be used more easily, as well as recommendations for a lower-cost PDA.

Faculty Survey
Faculty were asked about their observations and expectations of student PDA use, what their expectations were for the future of PDAs, ways to help other faculty use this learning aide, and other suggestions. Eight of the 9 faculty members involved with clinical and laboratory activities participated (88.9%). To minimize the likelihood of bias, a PDA team member who was not from the School of Nursing collected the data via interview. Faculty saw benefits of students having PDAs and reported students’ use of PDAs primarily as a drug and laboratory reference, for calculations and medical Spanish, and on a limited basis with clinical worksheets. They recommended that, for program expansion, faculty need their own PDAs to:
- Increase faculty comfort with its capabilities.
- Model PDA use for students.
- Help students when problems arose.
- Incorporate broader course use of PDAs (e.g., lectures).

Faculty members noted that for both students and faculty there was a learning curve and that comfort with the PDA increased with use. Three faculty members noted that student use increased when they observed faculty using PDAs. One faculty member reported that the bulkiness of the PDAs made it difficult for some students to carry them in their pockets. Faculty also noted student problems with “fatal errors,” the small size of the screen, and scrolling, which made it difficult to use the PDA for documents associated with the clinical experience.

Expansion of PDA Use
Unanticipated results included the interest in PDAs demonstrated by nursing students not involved in the study. Several senior nursing students asked team members for help in selection of PDAs and software to help them during the clinical practicum (24-month students) and after graduation (14-month students). During this study, nursing students shared additional PDA resources. For example, a student assigned to a cardiac unit for the clinical experience found an electrocardiogram interpretation PDA site.

Another unintended result was the expansion of PDA use among graduate nursing students and increased PDA exposure of the 14-month students. The coordinator of the graduate pharmacology course initiated a PDA requirement, drawing from the interdisciplinary team’s experiences. The 14-month students were given access to the course’s syllabus for PDA resources specific to advanced practice, areas of career interest for many of these students.

CONCLUSION AND RECOMMENDATIONS
This exploratory study provides beginning support for the use of PDAs in undergraduate nursing education. Continued study is recommended, given the small sample, differences in response rate between student groups, newness of the measures, and primary reliance on descriptive measures. The study’s limitations preclude attributing the differences between the groups in students’ information-seeking behaviors to the PDAs. While
the groups were similar in terms of the program of study and containing second-degree students, other differences could account for their information-seeking behavior. For example, students who sought admission to the second year of the 14-month option could have been more open to innovation and use of technology.

The risks involved in adopting PDAs in undergraduate nursing education are primarily related to the significant expense of the PDAs, software, and staff support. In addition, there are potential losses associated with delays in adoption, so further study is strongly recommended. PDAs support nursing education by providing students with ready access to current information and conveying the professional value of seeking information for use at the bedside.

We found that PDAs supported the 14-month students’ formulation of increasing numbers of questions associated with clinical situations and need to use current resources. The students made substantial use of their PDAs and health team members, while decreasing their reliance on textbooks and clinical faculty for answers. Given the scope of clinical faculty responsibilities in instructing and supervising students, it is reassuring that the 14-month students increased their use of other knowledge resources. They also placed greater value on the credibility of the information source versus convenience.

PDAs are an effective resource for students, especially for reference materials. Student use of and satisfaction with this technology is linked to speed of access and readability of the material. Programs that required extensive scrolling to locate information, instead of links or bookmarks, were used less frequently by students. As a result of this study, we recommend continued interdisciplinary cooperation and staff support in selecting programs and reformatting documents so they are more readable and accessible, given the small PDA screen size. However, learning these formatting skills and converting documents creates more work for faculty. The interdisciplinary team is converting more clinical documents and a skills tracking tool into formats readable via PDA. After being converted, the resources can be used on the clinical unit, saving faculty and students transcription time and reducing recall errors.

Given the press of academic and personal demands for students, it is important to streamline the process for PDA purchase and set up. We have successfully pursued student fee arrangements so students can be provided with a PDA with all programs installed. The program of phased introduction, free of student concern related to PDA use in the first clinical experience, was effective. Given students’ limited previous experience, small group sessions are important to facilitating comfort with PDA operation, especially their interface with personal computers. This study found that few students need significant support resources. Preparing the PDAs for use was more time consuming than providing user support, and the resource requirements were less than anticipated. Instituting the “15-minute rule” regarding when to seek help was useful to students. Providing faculty with PDAs so they can become comfortable with its operation is recommended to enhance their incorporation of PDAs into clinical teaching. Faculty may then be able to more purposely refer students to the PDA, thereby reinforcing students’ comfort with and reliance on a more consistently available and current information source.

REFERENCES