Assessing and Improving Students' Verbal Communication Abilities in Pharmacy Courses[1]

Christine Parkhurst

Massachusetts College of Pharmacy and Allied Health Sciences 179 Longwood Avenue, Boston MA 02115

Because pharmacy as a field requires greater proficiency in verbal communication skills than in the past, the verbal communication needs of pharmacy students were investigated. Pharmacy classes and internship placements in retail and hospital pharmacies were observed; pharmacy students, professors and preceptors were interviewed. Successful verbal communication, communication breakdown and communication repair in these settings were analyzed, resulting in a description of the verbal communication needs of pharmacy students. A list of observed communication tasks in clinical settings and in classes is provided, as is a classification of communication breakdowns and communication deficiencies, and methods for repairing these deficiencies. Students need a greater awareness of, and ability to repair, their verbal communication deficiencies.

INTRODUCTION

The ability of pharmacists to communicate verbally has become increasingly important as the pharmacist takes on the roles of provider of pharmaceutical care to patients and of provider of information and advice to colleagues in the health care community(1). The pharmacy curriculum must include courses which teach students the requisite verbal communication skills for these roles. These skills are based on a sociolinguistic awareness of the nature of truly effective communication. Since the population of the United States, and therefore the population of pharmacy students, is becoming increasingly multicultural, these skills also include mastery of the phonemics and intonation of American English as well as cross-cultural and sociolinguistic awareness of U.S. culture. The courses which teach these verbal communication skills should integrate sociolinguistic, communication and phonology components from the Liberal Arts with applications from the Pharmacy curriculum, since an integrated approach best serves the needs of the student population(2).

The focus of this study was; (*i*) to observe the verbal communication of students and pharmacists in pharmacy courses and in clinical settings; (*ii*) to analyze the students' needs and deficiencies; (iii) to apply this analysis to the curriculum of an advanced verbal communication course for pharmacy sudents using English as a Second Language (ESL); and (*iv*) develop the content of a verbal skills competency exam.

METHODS

The data collection was done at Massachusetts College of Pharmacy and Allied Health Sciences over two terms. Twenty-three hours of classroom observations were done in fourth-year therapeutics and professional pharmacy practice courses, and in fifth-year clinical courses. The lecture courses were audiotaped, and the role-play and oral final components of the professional pharmacy practice laboratory and clinical courses were audiotaped, reviewed and transcribed. These courses were chosen because they are directly related to the fifth-year clinical work in which students' verbal communication needs are most analogous to the needs of practicing pharmacists.

Sixteen and a half hours of observations of pharmacy externship settings were also done in four different locations, chosen to represent a spectrum of pharmacy practice. These observations were audiotaped, transcribed and reviewed later. Clinical and pharmacy practice faculty suggested these locations because each site represented a different type of pharmacy practice, and because the pharmacist/preceptors at these sites had many years of experience and were considered typical hospital or retail pharmacists. The student externs observed also represented a range of abilities. Since people are unlikely to alter greatly the speech styles they use in carrying out very familiar tasks in a familiar context, the speech patterns were typical of those the pharmacists normally used, and those the externs were learning to use.

One location was an independent retail pharmacy located on the ground floor of a building with doctors' offices on the upper floors. One student extern and one pharmacist/preceptor were observed here. Both were native speakers of English. Another site was a pharmacy owned by a national chain. This pharmacy was in a suburban shopping mall. Two student externs and one pharmacist/preceptor were observed. All were native speakers of English. The third site was a hospital pharmacy in a general hospital. Four pharmacists, three of whom were non-native speakers of English, and one student extern who was a native speaker of English, were observed. The fourth site was a pharmacy in a large Veteran's Administration hospital, which is a general hospital with a specialized wing for spinal cord injuries. Two pharmacist/ preceptors and three student externs were observed. Two of the externs were non-native speakers of English; the others were native speakers.

Table I. Observed speaking tasks

Speaking task, tasks (Instances)	Location and speaker (Instances)							
	Independent		Chain		General		V.A.	
	RPh	Student	RPh	Student	RPh	Student	RPh	Student
Maintain friendly relations (chat, joke) (23)	3	2	8	0	2	1	4	3
Counsel patient (22)	4	4	6	2	0	)	2	4
Answer phone (take orders, answer questions) (19)	5	2	4	4	4	)	0	0
Ask/answer students' questions (19)	0	0	4	3	1	1	6	4
Ring up sale (13)	2	6	2	3	0	)	0	0
Technical discussion with health professional (phone or face-to-face) (9)	3	0	1	0	0	2	0	0
Do favors, give directions, non-technical information (8)	8	2	4	0	0	)	0	0
Fill orders at window: answer questions (7)	0	0	0	0	6	5	0	2
Discuss business issues (2)	1	0	1	0	0	)	0	0
Negotiate disagreement (2)	0	0	0	1	1	)	0	0

All the pharmacies were located in and around Boston. All the observations were audiotaped. The audiotapes of the observations and interviews were supplemented with notes and transcriptions of the conversations. A linguistic observation form was also developed and used to code the data in the observations. (See Appendix A).

Twenty-five interviews, ranging from nine to forty-five minutes in length, were also done. One was with a pharmacy director, five were with student externs, five with pharmacy students, six with pharmacy professors, and seven with pharmacist/ preceptors. All the interview subjects were students or professors in observed courses, or pharmacists or student externs at the observation sites. All but two interviews were audiotaped. Notes were taken on the two telephone interviews which were not. The interview subjects' remarks were analyzed to assess frequency of reported communication roles or tasks and reported problems. The interviews were also the source of reported communication roles which were not observed.

RESULTS

The data were analyzed in terms of classification of speaking tasks observed or reported in pharmacy classes and at observation sites. Speaking tasks observed at externship sites are listed in descending order of frequency in Table I. Speaking tasks reported, but not observed, are listed in Appendix B. Speaking tasks observed in pharmacy classes are listed in Appendix C. A list of observed instances of communication breakdown is provided, followed by a list of deficiencies in students' ability to communicate verbally, based on analysis of the causes of communication breakdown.

Instances of Communication Breakdown

Instances of communication breakdown in some pharmacy classes were difficult to define because it was not always clear whether or when communication had broken down during the class. This was especially true during lecture classes. For example, it could be inferred that communication had broken down for many students during one observed lecture when many students were asking each other questions and showing each other where the speaker was on the lecture outline, and that communication was maintained during another observed lecture because the professor encouraged active student participation and many students asked him questions directly when they were confused, so that communication could be repaired. However, the lack of interactive communication during typical lecture classes makes it difficult to substantiate communication breakdown simply by doing classroom observation. Also, the lecture format is not analogous to most of the speaking tasks observed or reported in retail and hospital pharmacies. The role plays and class exercises observed in the Professional Pharmacy Practice lab were analogous to the observed speaking tasks, and the instances of communication breakdown and repair observed in these classes were analogous to those observed at the externship sites.

Forty-three instances of communication breakdown were observed. Some were intentionally not repaired by a professor in Professional Pharmacy Practice lab or clinical courses; the professors were modeling communication problems or were grading students at least partly on ability to communicate. Other instances of communication breakdown took place at the four pharmacy observation sites. These have been classified and are listed in descending order of frequency.

Inappropriate Register (speech style) Use: *Nine instances* (See Table II.). Two instances were observed at the chain pharmacy, two at the independent retail pharmacy, one at the V.A. hospital, three during Professional Pharmacy Practice oral final exams, and one at a fifth-year clinical patient case study presentation. All were observed among students or student externs; two were non-native speakers and seven were native speakers. Many more instances were observed during Professional Pharmacy Practice lab role-playing patient counseling exercises (not counted). Communication broke down because students used a speech style that was too formal or informal, too technical or non-technical for the real or hypothetical situation and audience.

Unclear Speech Production and/or Lack of Audience Awareness: *Eight instances*. At the two hospital pharmacy sites, seven instances were noted among non-native speakers and one was noted in a native speaker. The non-native speakers' inaccurate pronunciation, stress and intonation caused com-

Table II. Classification of register use

Setting	Context	Speaker(s)	Register used
Hospital pharmacy	telephone call from floor	pharmacist/MD (not known to each other)	+ technical, + formal
Hospital pharmacy	telephone call from floor	pharmacist/MD (known to each other)	**+** technical, - formal
Hospital pharmacy	patient counseling session	pharmacist/patient (not known to each other)	- technical, + formal
Hospital pharmacy	pharmacy rounds	nurse or MD/pharmacist (not known to each other)	**+** technical, +- formal
Retail pharmacy	dispensing medication	pharmacist/patient (not known to each other)	- technical. + formal
Retail pharmacy	dispensing medication	pharmacist/patient (well known to each other)	- technical, - formal
Retail pharmacy	prescription phoned in from MD's office	nurse/pharmacist	**+** technical, - formal
Retail/Hospital pharmacy	consultation	pharmacist/pharmacist	+ technical, -formal
Pharmacy Class	lecture	professor	+technical, +-formal class
Pharmacy Practice Lab	class exercise/exam	professor/student	+-technical, +-formal
Clinical Class	patient case/exam	student	+technical. +formal

munication to break down in seven instances. The native speaker's speech was too quick, too soft and had too few pauses in one instance. In six cases the speaker was unaware of, or ignored, the listener's incomprehension. In two cases the speaker attempted unsuccessfully to repair communication by repeating without paraphrasing.

Poor Listening Comprehension: *Seven instances.* Four instances were noted at the general hospital pharmacy site, two at the V.A. hospital site, and one at the chain pharmacy site. Four involved non-native speakers and three involved native speakers. Listeners misunderstood information on the phone or face-to-face about medication names, patient names, orders on how to take a medication, or what a third person had said. In five instances speakers were aware of breakdown and communication was repaired, in three instances by one-word requests for repetition: "Hunh?" or "Hah?" and in two instances by longer requests: "Could you say that again more slowly?" or " Could you say that name again?" In two instances communication was not repaired because the listeners gave up. In Professional Pharmacy Practice lab, many instances of this problem were observed during exercises in which students were learning to take phoned-in prescriptions (not counted).

Avoidance of Communication or Repair: *Seven instances.* Six instances took place at the general hospital pharmacy, and one at the chain pharmacy. Five involved non-native speakers and native speakers; two involved only native speakers. In three instances, one person tried to initiate communication and the other person walked away or said s/he wanted to speak to someone else, and the first person didn't persist. In two instances, people avoided situations in which they would have to communicate. In two instances, people used strategies to avoid communicating and used another person to communicate for them.

Inaccurate or Missing Information: *Six instances.* Three instances were observed at the independent pharmacy, two at the chain pharmacy and one at the hospital. Five involved native speakers, and one involved a non-native speaker. In three cases, doctors' instructions had been misunderstood or were incomplete and information needed to be provided; if it was not, communication broke down. In three cases, student externs provided information that was inaccurate, overly technical or insufficiently precise, and pharmacists had to correct or supplement information.

Inappropriate/Ambiguous Speech Act: *Three instances.* Two instances were observed at the independent pharmacy, and one at the retail pharmacy. All involved student externs who were native speakers. In two cases, a speaker made a suggestion or a refusal that was misunderstood as another speech act (providing information but not refusing or suggesting). In one case, a student made a suggestion (to change a prescription) that the pharmacist said should have been phrased tactfully as a request for information ("Why is this prescription like this?"), followed by a suggested change if the information was requested.

Lack of Empathy: *Three instances.* One instance was observed at the independent retail pharmacy, one at the chain pharmacy, and one at the V.A. hospital pharmacy. Two involved student externs who were native speakers, and one involved a non-native speaker. In one case, a student extern counseling a teenage girl accompanied by her mother asked the girl if she was pregnant; she refused to answer. In another case, a student extern erroneously charged a hearing-impaired man tax on hearing-aid batteries; she failed to negotiate tactfully about the charge, and he became angry and left. In the third case, the student extern was counseling a patient who was complaining about his symptoms rather than attending to her explanation of how to take the medication. She overrode him several times, intent on her explanation. It wasn't until the pharmacist/preceptor, who was listening, responded to him empathetically ("That must be hard") that he stopped speaking and began listening to the explanation.

Deficiencies Leading to Communication Breakdown
Deficient Knowledge of Appropriate Register (speech style) Use. "Linguistic register" is the term used to denote the speech style used by members of a discourse community to communicate appropriately in specific situations or con-

texts. A discourse community is a group of people such as pharmacists, computer programmers or baseball fans who habitually communicate together using a certain speech style or styles. The speech style is determined by who the speakers are and their relationship to each other, the setting in which they find themselves, and the context in which they are speaking. The linguistic registers used by pharmacists can be described as either technical or non-technical, and either formal or informal. Decisions which members of the discourse community (pharmacists) make concerning register use are based on their analysis of the setting, the context, and the speakers with whom they are interacting(4-6). Experienced pharmacists adjust their speech style to these considerations. They do this automatically, without making conscious decisions about how to speak.

Appropriate register use not only facilitates accurate communication, but allows the speaker to demonstrate his/her membership in the discourse community (of pharmacists), and in the broader discourse community (of health professionals). Pharmacy students and externs must master appropriate register use to be accepted as competent members of the discourse community. Register misuse is perceived by pharmacy professors and preceptors, and by other health professionals, as a lack of professionalism, and as a source of communication breakdown. For example, a fifth-year clinical student presented a patient case study using a technical but informal style she had heard health professionals using to discuss the case among themselves. The style and content were too informal for the context (a formal presentation/exam), and the professor perceived the style as unprofessional ("It sounded like she was gossiping about the patient"). A common example is the student who uses a technical but informal style for a non-technical audience such as a patient (" Are you using any OTC meds or beta blockers?"), and is misunderstood. Students who use an overly technical style in effect provide inaccurate or missing information when patients or clients misunderstand them.

A list of examples of communication tasks, their settings, contexts, the speakers and the registers (speech styles) used is given in Appendix D. There is some variation among speakers, of course, so the chart represents a generalization. This type of simple categorization can help students become aware of what style competent speakers are using, and whether their own style is appropriate. It helps them make decisions about what features make speech formal or informal, technical or non-technical.

Deficient Speech Production Skills. This deficiency was found most frequently in some non-native speakers whose pronunciation of American English, stress and intonation, and/or grammar were not very comprehensible. For some student externs and pharmacists, communication broke down completely at times due to these problems. For example, they had trouble differentiating between affirmative and negative ("You can/can't take this with alcohol"), with using modals correctly ("You don't have to take this with food" rather than "You must not take this with food"), and with pronunciation of individual words or phrases ("pregnant"= "pwet-na"). Other non-native speakers were excellent communicators and had none of these problems. Some native speakers spoke too softly, quickly, or with too few pauses at times, especially in formal situations or when communicating with non-native speakers.

Deficient Listening Comprehension Skills. The most frequent context for this problem was phoned-in prescriptions in which some of the information such as the patient's name or the medication name was initially misunderstood (four instances). The next most frequent context was taking orders or filling prescriptions face-to-face (two instances). Repair was attempted in these cases if the listener was aware of the breakdown. If not, repair had to be made with a later phone call. Some students' or (non-native) pharmacists' repair strategies ("Hunh?") only elicited a repetition. Others elicited a repetition using a more formal and appropriate style (" Could you spell that/ say that again more slowly?"). Some checked accuracy of communication by reading the information back to verify it. If students were unsure of the accuracy of their understanding, they checked with the pharmacist/preceptor; this was not counted as a breakdown of communication.

Students and pharmacists who were good communicators either understood initially or used successful strategies to check the accuracy of their listening comprehension, or repair communication if they hadn't understood. Non-native speakers were more likely to have listening comprehension problems (four of seven instances), but non-native speakers who were good communicators were also more likely than native speakers to check the accuracy of their understanding in order to avoid communication breakdown.

Deficient Ability to Initiate or Repair Communication. Student externs, pharmacists and other health professionals who felt they had problems communicating, or communicating with certain people, avoided situations in which they had to communicate. Two non-native speaking pharmacists spent several hours filling prescriptions, not answering the phone, and avoiding interactions with patients or health professionals. When one had to fill a prescription at the window, she did so silently, and said nothing in response to the health professional's friendly, " Hey, how're you today?" When one had a question about a prescription, she asked another pharmacist (also a non-native speaker) who was a good communicator to phone the floor for her. Health professionals and clients refused to communicate with people they perceived as poor communicators; they left and came back, asked to speak to someone else, and in one case walked from the hospital floor to the pharmacy to communicate face-to-face with someone other than the pharmacist who was answering the phone. When communication broke down, speakers gave up rather than persisting. In one case, a pharmacist did not phone a hospital floor about a medication substitution, and the patient got the needed medication only the following day.

DISCUSSION
Methods to Correct Deficiencies
Correction of Deficient Knowledge of Appropriate Register (speech style) Use

Students develop greater sociolinguistic awareness when they take Interpersonal Communication courses, applied linguistics courses, or verbal skills courses that provide them with the background necessary to be sensitive to issues of appropriate register use. Courses such as these can also help them become aware of linguistic concepts such as discourse analysis, which will help them avoid ambiguous speech acts

and use speech acts which are appropriate for the register. Discourse analysis looks at the intent behind the utterance. For example, when a student extern said, "We also have that in generic form", the intent was a suggestion: "You might consider buying the generic form", but the response showed that particular listener did not perceive the utterance as a suggestion. The student didn't re-phrase the utterance as a more clear-cut suggestion. The student extern who failed to use the conventional polite question but used a more direct suggestion when calling about a prescription change was reprimanded because he was unaware of the crucial difference between these two speech acts. The difference was not a difference in meaning but a face-saving convention which members of the discourse community use automatically.

Finally, these courses help students learn about the concept of empathy and how to empathize. A more empathic approach would have helped student externs maintain communication with the pregnant teenager, the hearing-impaired client and the patient who was complaining about his symptoms. The experienced pharmacist who had mastered the register felt compelled to empathize with the patient and repair communication even though he was there to observe.

Correction of Deficient Speech Production Skills. Non-native speakers of English who have problems in this area can improve their level of comprehensibility and their ability to monitor the correctness of their speech production, and learn strategies to repair communication, by taking verbal skills courses for ESL students. Native speakers who have problems communicating clearly in formal situations can learn to do so by taking speech courses. Courses in verbal skills or speech which are specifically oriented toward pharmacy students would best meet their needs.

Correction of Deficient Listening Comprehension Skills. Students need practice developing their listening comprehension skills and learning repair strategies; they can practice these skills by doing role-playing exercises such as those done in Professional Pharmacy Practice lab. Non-native speakers who have listening comprehension problems may need extra practice designed specifically for non-native speakers which they can get by taking ESL verbal skills courses which are tailored to their needs as pharmacy students.

Correction of deficient ability to initiate or repair communication. Students need to learn to take responsibility for initiating, maintaining and repairing communication, even with people with whom they find it difficult to communicate, such as non-native speakers or elderly, hearing-impaired people; society is aging and is also becoming increasingly multilingual. If students have trouble communicating themselves, they need to take courses or learn effective communication strategies in other ways, rather than avoiding situations in which they have to communicate.

CONCLUSION

The verbal communication skills component of students' education should not be ignored. Pharmacy educators should agree on the nature of the verbal skills required to function as a pharmacist, and on criteria used to assess those skills. Verbal communication skills applied to pharmacy should be integrated into the pharmacy curriculum. The results of this study indicate that the curriculum should include courses that insure the ability of all students, native and non-native speakers alike, to speak clearly enough to maintain communication easily, to provide all information accurately and unambiguously in a style that is appropriate to the audience, to empathize with other speakers' concerns and understand other speakers' meaning at all levels, and to take responsibility for initiating, maintaining and repairing communication, even with people with whom it is difficult to communicate. Students' mastery of these skills should be assessed with an exit exam from communication-related courses. Further courses should be provided for students who do not pass the exit exam, which they should complete prior to their externship, or prior to graduation. Students who graduate without having mastered these skills will be hampered in their ability to function competently in the roles of pharmacist as provider of pharmaceutical care, and pharmacist as expert in the health care community.

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APPENDIX A: OBSERVATION FORM

Setting: retail pharmacy, hospital pharmacy, class, interview
Identity of Speakers: pharmacist, pharmacist/preceptor, pharmacy professor, pharmacy student, pharmacy extern, other health professional, patient
Language of Speakers: native English speaker, non-native English speaker
Register Used: formal/technical, formal/non-technical, informal/technical, informal/non-technical
Speaking Task: describe
Communication Breakdown Observed: describe, transcribe (broad phonemic transcription)

Attempted Repair Observed: describe, transcribe (broad phonemic transcription)
Strategies Used to Negotiate Meaning: describe

APPENDIX B: ADDITIONAL SPEAKING TASKS REPORTED IN INTERVIEWS

Retail Pharmacy
1. Give clerk or pharmacy technician instructions or information; make sure they give correct information to customers
2. Negotiate with professional entities: drug companies (wholesalers); third party payers
3. Negotiate with clients about questionable prescriptions: verify prescription, refuse to fill prescription

Hospital Pharmacy
1. Give in-service lectures to health professionals (formal, scheduled; continuing education)
2. Give unscheduled lectures/explanations on rounds
3. Present patient cases (" not common, but a useful ability for students to learn")

APPENDIX C. SPEAKING TASKS IN PHARMACY COURSES

Lecture Classes
1. Listen and take notes on lecture
2. Ask/answer questions of professor, of other students
3. Request additional information/clarification of professor
4. Contribute information/experiences to class discussion
5. Participate in impromptu role play to clarify points
6. Re-direct topic (ask for review/explanation)

Professional Pharmacy Practice Lab
1. Ask/answer questions of professor about lab work, medications
2. Consult with other students, preceptors about lab work
3. Role-play RPh taking phoned-in order from doctor's office
4. Role-play RPh asking for a change/clarification of a prescription
5. Role-play RPh counseling a patient: explain how to take a medication, mechanism of action, possible side effects/adverse effects, answer questions

Clinical Course (Oral Exam)
1. Give a formal patient case presentation