Needs Analysis of Dispensing Assessment for Thai Pharmacy Students

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Abstract

This paper examined the needs for criteria on dispensing assessment in English for Thai pharmacy students. A questionnaire including 37 items was distributed to 129 students, who were pharmaceutical science students and pharmaceutical care students, and 21 pharmacy experts. ANOVA and the *post hoc* test analysis were used to investigate whether there were differences of opinion among these three groups. Informant specialists were also consulted. The results showed disagreement among the groups on 21 items. Nineteen items remained after the Games-Howell *post hoc* analysis with 4 items eliminated. It can be concluded that students' work attitude was affected by the department they are in regardless of the same content provided. The study also confirmed previous research, in which content experts have tended to overlook this linguistic area since it is not their specialty. Students' opinion cannot be used solely in deciding which content to be taught without professionals in the field and vice versa. Conducting a needs analysis should at least involve professionals in the field, students, and language teachers.

Keywords: ESP assessment, criteria, needs analysis, pharmacist-patient communication, pharmacy students

Introduction and Literature Review

The significance that a pharmacist has in society is not only to prescribe drugs but also how they can talk to the patient and obtain information in order to be able to make decisions on which drugs are needed. One of the desirable characteristics of a pharmacist indicated by World Health Organization (WHO, 2006) was being a good communicator. It is without question that communication skills play a critical role in this occupation (Graham & Beardsley, 1986; Kimberlin, 2006). Investigating the needs in pharmacy communication is thus necessary for the establishment of English classes for pharmacy students. In fact, a pharmaceutical science faculty of a university in Thailand has received complaints from drug stores around Thailand, where training occurs, about the students' inability to communicate with patients in English effectively. As a response to the request from faculties of pharmacy on equipping students with English skills they need for work, tasks and rubrics for classroom assessment are needed for training the students and for assessing their performance while dispensing drugs in English.

Although the differences in the needs among the students and stakeholders can be difficult to include in the curriculum, students are considered essential stakeholders in conducting a needs analysis as well as teachers and local administrators (Brown, 2016). As a matter of fact, student validation is crucially important because, as pointed out by Bachman and Palmer (1996), taking into account student feedback in the design and development of test tasks can make both test preparation and test taking more effective. According to Brown (2016), a needs analysis can be conducted from five viewpoints: democratic, discrepancy, analytic, diagnostic, and a mix of those views. Considering target language use can be another approach to conducting a needs analysis. According to O'Sullivan (2012), English for Specific Purpose (ESP) or Language for Specific Purposes (LSP) assessment can be categorized in two ways: the field of its use (such as business and law) and the purpose (work, immigration, and study) of the test. Aiming the purpose of the study on the requests of students, teachers, and administrators whose purpose is shared among the group as it is for the work usage, this study adopted the democratic viewpoint in conducting a needs analysis, which included target-situation use analysis as the main concern.

Much interest (Gortney & Lundquist, 2013; Kolšek, Švab, Pavlič, & Bulc, 2003; Ried et al., 2007; Schell & Lind, 2003; Sibbald, 1998) has been paid to the education of pharmacy professionals, focusing on the pharmacist's communication skills with the patient in English. These studies can be categorized into three main groups according to the researchers: (1) the specialist in the field of pharmaceutical science; (2) cooperative research between an English language instructor and a pharmacy instructor with interest in second language learners; and (3) language instructors. Based on the different focuses of these researchers, various methods and the focus of the content have been suggested as to how to assess pharmacist-patient communication, some for native speakers of English and some for second language learners. It is worth noting that although none of these studies referred to their assessment as performance based, their assessment fell into that category.

Two studies by pharmacy experts (Kimberlin, 2006; Schwartzman, Chung, Sakharkar, & Law, 2013) on overall content matters related to teaching of communication of pharmacy schools in the U.S., Canada, and Puerto Rico revealed no information on linguistic details but rather on general communication skills. In some cases, pharmacy experts (Collett, Rees, Mylrea, & Crowther, 1994) did not include linguistic features in the patient-communication assessment, while some (Parkhurst, 1994; Sibbald, 1998) included some information concerning verbal expression. A possible problem found in these studies is the language background of the participants, as most of them are native speakers of English, and as a result linguistic details may not be needed for these groups of participants. Similar to what Manias and McNamara (2016) found, the background of the participants as native speakers or passing university language requirements was not connected with the issue of language and communication. While Chowdhury and Haider (2012) explained EFL pharmacy students as needing particular study skills for the whole

course, not many studies can be found on EFL students participating in performance-based assessment related to medical or pharmacy students. In other words, communication skills are commonly inclusive of performance-based assessment while language use is not considered essential, even in the case of second language learners in previous research, which addressed general listening and speaking skills.

The focus of previous classroom assessment research (Graham & Beardsley, 1986; Hyvärinen, Tanskanen, Katajavuori, & Isotalus, 2012; Parkhurst, 1994; Sibbald, 1998) related to the assessment of students in the pharmacy field depended on the researchers' expertise. This means that some of these studies did not include students or language instructors as a part of the stakeholders. As an illustration, a sample rubric from a study by Graham and Beardsley (1986) suggested that assessment can be carried out only by pharmacy experts. As a matter of fact, experts tend to use their knowledge and professionalism as a baseline while linguists rely on language and communication aspects (Douglas & Myers, 2000). Similar to Dougla's (2000) concept including the content knowledge as a part of ESP assessment, some involvement from specialists in the field can add a greater range of authenticity to the assessment (O'Hagan, Pill, & Zhang, 2016) as stakeholders in order to obtain information about real needs specifically for dispensing drugs in English by Thai pharmacy students. The present study aims to answer the following research questions:

1. What are the relevant criteria for assessing the dispensing skills of Thai pharmacy students?
2. Do the students' opinions match the content experts' opinions?

Research Methodology

Context and Participants

All pharmacy students are required to have 400 training hours both at drugstores and hospitals. The faculty at the target university established cooperation with the drugstores around Thailand to accept these pharmacy students, especially drugstores in cities that are tourist attractions. A part of the agreement that the faculty made with the drugstores concerned the evaluation of the students' performance, which included the students' ability to communicate with patients. In the drugstores, pharmacy students had to serve all kinds of patients while under supervision of a pharmacist in charge. These pharmacists responsible for training the students were thus the ideal participants since they are familiar with assessing pharmacy students when practicing their dispensing skills at drugstores.

The consent form and questionnaire were sent to a list of 50 qualified drugstores obtained from a pharmacy school of a university. Personal information obtained from the pharmacists included only their sex and the amount of time that they had

worked at the drugstore. Twenty-two questionnaires were returned out of 65. One of the questionnaires was missing some information, leaving 21 questionnaires available for data analysis. The returning method used most was mailing, while two questionnaires were returned by email, and one questionnaire was delivered and picked up in person. Most of the participants were not from Bangkok. Ten participants were male and 11 were female at 47.6% and 52.4% respectively. The dispensing experience at the drugstore of the participants varied from 8 months to 34 years.

Fifth-year undergraduate pharmacy students from a university in Bangkok, Thailand also participated in this study. Each year, approximately 140 students attend the target pharmacy schools. These students took three English courses, two fundamental English courses and one course of English for the pharmaceutical profession. Their English proficiency varied from B1 to C1 on the Common European Framework of Reference for Languages (CEFR). The students belonged to two fields of pharmacy – pharmaceutical science, which is for those that want to work in the drug industry, and pharmaceutical care, which is for those that wish to work in a drugstore. ESP courses were arranged not according to the English institute but by the requirements of the students' faculty. The professionals in the field can request the content and skills that they believe are appropriate for guiding their students in their field of their respective occupations. For the pharmacy students at the target university, one of the requests was to help students learn to dispense drugs in English.

The students were in two fields of study: pharmaceutical sciences and pharmaceutical care. At the beginning of their class time, the students were asked to fill in the questionnaire on a voluntary basis. A total of 132 students responded to the questionnaire, but three of them were found to be missing some parts of the data, leaving 129 students (39 males and 90 females) available for data analysis. Seventy students were in the field of pharmaceutical sciences at 54.3% and 59 students were in the field of pharmaceutical care at 45.7%.

Instrument

The instrument used in this study was the questionnaire developed from secondary research (Kimberlin, 2006) and the Thai dispensing rubric was distributed to pharmacy students and pharmacist experts. The questionnaire consisted of three parts: personal information, communication skills, and pharmaceutical science content. Developed to fit both the students and the pharmacists, the questionnaire was divided into two forms, with the only difference being in terms of personal information details. The first part of the questionnaire asked the students to indicate their pharmacy major, while the pharmacist's version requested information about how long they had worked in their field. The communication skills and pharmaceutical skill content section were developed based on the Thai dispensing

rubrics and a survey on the skills identified on the assessment forms for pharmacy student communication with patients (Kimberlin, 2006). Some of the topics were derived from the Thai dispensing rubric, some from Kimberlin (2006), and some from both the Thai dispensing rubric and Kimberlin (2006). The total of 37 items for communication skills and pharmaceutical science content in the questionnaire was validated by language experts using IOC before distributing the questionnaire to the participants.

Apart from personal information, the questionnaire asked the participants to respond to two items: overall communication skills and pharmaceutical skills knowledge. The participants were asked to rate each item on a four-point Likert scale, numbered 4 to 1 as in very important, important, somewhat important, and not at all important respectively. In each section, a space was provided if the respondent wanted to add any suggestions. A total of six sections was composed of two main knowledge areas to be assessed, which were overall communication skills and pharmaceutical skills. The first section, overall communication skills, was composed of four divisions: initiating communication, verbal communication, concluding the encounter, and non-verbal communication. The second section, pharmaceutical skills content, was divided into two sections: eliciting information from patients and initiating education interventions. The content of the questionnaire according to its divisions is shown in Table 1.

All of the items were calculated to find the mean and standard deviation among the experts and students, which were divided into two departments: pharmaceutical care and pharmaceutical science students. In each part, the results regarding the experts were presented first followed by the students as a whole and the students according to their department. The items were considered based on the mean value it received. They were divided into three groups: “highly important” when the value was higher than three; “important” when the value was greater than two; and “not important” when the value was less than two. The mean of the items was examined in the first round when the criterion was less than 2.5.

Table 1. Questionnaire content according to its divisions

Sections	Divisions
I: Personal information	- Pharmacy major (students) - Time of work experience (pharmacy experts)
II: Overall communication skills	- Initiating communication - Verbal communication - Concluding the encounter - Non-verbal communication
III: Pharmaceutical skills	- Eliciting information from patients - Initiating education interventions

Data Analysis

The Games Howell *post hoc* test analysis was applied in order to investigate if there were differences among three groups of mean scores based on the opinions from the three groups of participants which were pharmaceutical care students, pharmaceutical science students, and pharmacy experts.

Findings

Initiating communication

Using ANOVA to compare the three groups, which were pharmacy experts, pharmaceutical care students, and pharmaceutical science students, the results showed different opinions on five items as their p-value was lower than .05. The items were *identifying yourself as a pharmacist*, *introducing your name to patients*, *confirming the patient's identity, calling patients by name*, and *offering a warm greeting*.

Table 2. Results of one-way ANOVA and post-hoc test on initiating communication

Variables	Games-Howell	Mean Square	F	P-value
1. Greeting patients		1.215	2.747	.067
2. Identifying yourself as a pharmacist		4.434	6.544	.002
pharm care and experts	.213			
pharm care and experts	.008			
pharm science students and experts	.093			
3. Introduce your name to patients		3.617	5.617	.004
pharm care and experts	.052			
pharm care and experts	.006			
pharm science students and experts	.264			
4. Confirming the patient's identity		.230	4.755	.010
pharm care and experts	.984			
pharm care and experts	.194			
pharm science students and experts	.219			
5. Ask for the patient's name		2.551	2.609	.077
6. Call patients by name		4.326	5.387	.006
pharm care and experts	.065			
pharm care and experts	.011			
pharm science students and experts	.379			

7. Offer a warm greeting		2.868	6.461	.002
pharm care and experts	.006			
pharm care and experts	.920			
pharm science students and experts	.013			

First, the *post hoc* test between pharmaceutical care students and pharmaceutical science students showed that two items were viewed differently by the two groups. The Games-Howell value of *introducing your name to patients* and *offering a warm greeting* was .052 and .006 respectively. The second was to compare the pharmaceutical care students and pharmacy experts. The results revealed that these two groups viewed three items differently, which were *identifying yourself as a pharmacist*, *introducing your name to patients*, and *calling patients by name* at .008, .006, and .011 respectively. Lastly, comparing the pharmaceutical science students and pharmacy experts showed that one item was in disagreement, which was *offering a warm greeting* at .005. Based on the results, four items not included in the rubric were *identifying yourself as a pharmacist to the patients*, *introducing your name to patients*, *asking for the patient's name*, and *calling patients by name.*

Verbal communication

From the results, six items were viewed to be significantly different among the groups, while one item, *using written information to emphasize and help with oral communication*, was considered to be partially significant at .053. The six items, which were *using appropriate tone of voice*, *using correct English language*, *using correct English pronunciation*, *avoiding medical jargon*, *modifying communication to meet special needs of patients*, and *using open-ended and close-ended questions*, were further analyzed with a *post hoc* test, while the one with partial significance was eliminated.

Table 3. Results of one-way ANOVA and post-hoc test on verbal communication

Variables	Games-Howell	Mean Square	F	P-value
1. Using pace and silence appropriately		.493	1.302	.275
2. Speaking loudly enough to be heard		.899	2.671	.073
3. Using appropriate tone of voice		1.424	4.693	.011
pharm care and pharm science students	.184			
pharm care and experts	.031			
pharm science students and experts	.285			
4. Using correct English language		5.822	6.544	.000
pharm care and pharm science students	.474			
pharm care and experts	.000			
pharm science students and experts	.003			
5. Using correct English pronunciation		2.468	6.293	.002
pharm care and pharm science students	.014			
pharm care and experts	.020			
pharm science students and experts	.667			
6. Avoiding medical jargon		.925	5.253	.006

pharm care and pharm science students	.068			
pharm care and experts	.074			
pharm science students and experts	.521			
7. Modifying communication to meet special needs of patients		1.458	6.001	.003
pharm care and pharm science students	.005			
pharm care and experts	.143			
pharm science students and experts	.974			
8. Using open-ended and close-ended questions appropriately		1.219	4.797	.010
pharm care and pharm science students	.010			
pharm care and experts	.227			
pharm science students and experts	.995			
9. Using written information to emphasize and help with oral communication		1.603	2.995	.053

First, the results of the *post hoc* test between the pharmaceutical care students and pharmaceutical science students showed that three items were viewed significantly different by the two groups at .014, .005, and .010 respectively: *using correct English pronunciation*, *modifying communication to meet special needs of patients*, and *using open-ended and close-ended questions appropriately*. Secondly, comparing the pharmaceutical care students and pharmacy experts showed that three items were in disagreement, which were *using appropriate tone of voice*, *using correct English language*, and *using correct English pronunciation*. Lastly, comparing the pharmaceutical science students and pharmacy experts showed that *using correct English language* was viewed significantly differently by the two groups at .003.

Comparing the two groups of students to the pharmacy experts, the pharmaceutical care students' view was significantly different from that of the pharmacy experts on three items, while the pharmaceutical science students' view differed on only one item, which was *using correct English language*. Another item on a similar issue but more specific was *using correct English pronunciation*, which showed that pharmaceutical care students valued this more than the other two groups. Although the experts did not view the linguistic items as important, the rubric included them.

Concluding the encounter

The results of the ANOVA showed that two items were viewed differently by one of the groups, which was *asking if there is anything else the patients would like to discuss* at .040 and *thanking the patients* at .000. These two items were further studied in the *post hoc* test analysis. For the first *post hoc* item, a difference was shown between the pharmaceutical care students and pharmaceutical science students at .050. This result is similar to the previous section where the pharmaceutical care students assigned a higher score to the items compared to the pharmaceutical science students.

Table 4. Results of one-way ANOVA and post-hoc test on concluding the encounter

Variables	Games-Howell	Mean Square	F	P-value
1. Summarizing the information		.081	.432	.650
2. Asking if there is anything else the patients would like to discuss		1.432	3.29	.040
pharm care and pharm science students	.050			
pharm care and experts	.198			
pharm science students and experts	.996			
3. Inviting the patients to contact if questions or concerns arose		.841	1.542	.217
4. Thanking the patients		5.591	9.738	.000
pharm care and pharm science students	.019			
pharm care and experts	.015			
pharm science students and experts	.000			
5. Ending the conversation politely		1.045	2.747	.067

For *thanking the patients*, the results revealed that the three groups viewed the item differently from the others as the importance was ranked at three levels. The highest mean that this item received was from the pharmacy experts at 3.57, followed by the pharmaceutical care students at 3.14, and pharmaceutical science students at 2.76.

Non-verbal communication

The results of the ANOVA showed that the groups viewed the item in the same way, so none of the items in this section was further analyzed in the *post hoc* test analysis.

Table 5. Results of one-way ANOVA test on concluding the encounter

Variables	Mean Square	F	P-value
1. Demonstrating appropriate eye contact	.985	2.469	.088
2. Demonstrating appropriate posture and body language	.289	.792	.455
3. Wearing appropriate attire	.473	1.637	.198
4. Displaying an appropriate health-professional manner	.267	1.005	.368

Eliciting information from patients

For both the pharmacists and pharmacy students, all of the items were rated as highly important by the two main groups. The ANOVA results showed that the groups agreed on one item, which was *asking patients about their concerns or reasons for the visit* at .074 and differed on the rest of the items.

Table 6. Results of one-way ANOVA and post-hoc test on eliciting information from patients

Variables	Games-Howell	Mean Square	F	P-value
1. Asking patients about their concerns or reasons for the visit		.683	2.645	.074
2. Giving patients opportunity and time to talk		.936	5.210	.007
pharm care and pharm science students	.004			
pharm care and experts	.583			
pharm science students and experts	.654			
3. Asking for a complete record of the patient's current health conditions and therapies		.438	4.100	.018
pharm care and pharm science students	.024			
pharm care and experts	.855			
pharm science students and experts	.315			
4. Asking questions to assess the patient's understanding of key information about medications		1.906	8.421	.000
pharm care and pharm science students	.000			
pharm care and experts	.356			
pharm science students and experts	.360			
5. Asking questions to assess the patient's experience with medications currently being taken		1.847	6.221	.003
pharm care and pharm science students	.003			
pharm care and experts	.928			
pharm science students and experts	.158			

The result of the *post hoc* test between pharmaceutical care students and pharmaceutical science students showed that all four items were viewed differently by the two groups. However, no other disagreement was found on any items between the two pairs.

According to the *post hoc* test results, the pharmaceutical care students had the highest mean score on all of the items except the last item, followed by the pharmaceutical science students with the second-highest ranking, and the pharmacy experts as last. The rank was changed in the last item as the pharmacy experts' score was higher than that of the pharmaceutical science students, while the highest was still that of the pharmaceutical care students. The different results point out that the pharmaceutical care students tended to rate all items in this section higher than the pharmaceutical science students and pharmacy experts.

Initiating educational interventions

Based on ANOVA, the results showed that two items were in agreement among the groups, which were *discussing one drug or therapeutic regimen at a time*, and *providing complete and clear instructions on medication*. The rest of the items were further studied with a *post hoc* test analysis.

Table 7. Results of one-way ANOVA and post-hoc test on educational interventions

Variables	Games-Howell	Mean Square	F	P-value
1. Emphasizing key information		1.368	6.477	.002
pharm care and pharm science students	.007			
pharm care and experts	.947			
pharm science students and experts	.020			
2. Providing reasons for advice		2.310	5.129	.007
pharm care and pharm science students	.008			
pharm care and experts	.782			
pharm science students and experts	.008			
3. Providing appropriate recommendations based on indications, efficacy, adherence, safety, and cost-effectiveness		2.698	6.645	.002
pharm care and pharm science students	.040			
pharm care and experts	.017			
pharm science students and experts	.368			
4. Discussing one drug or therapeutic regimen at a time		.279	1.100	.336
5. Providing complete and clear instructions on medication		.243	1.956	.145
6. Verifying the patient's understanding of the new information provided		1.826	5.203	.007
pharm care and pharm science students	.100			
pharm care and experts	.046			
pharm science students and experts	.429			
7. Working with patients to schedule the doses		4.467	10.171	.000
pharm care and pharm science students	.000			
pharm care and experts	.039			
pharm science students and experts	.854			

First of all, the results of the Games-Howell test between the pharmaceutical care students and pharmaceutical science students showed that four items were viewed differently by the two groups, which were *emphasizing key information* at .007, *providing reasons for advice* at .008, *providing appropriate recommendations based on indications, efficacy, adherence, safety, and cost-effectiveness* at .040, and *working with patients to schedule doses* at .000. Second, comparing the pharmaceutical care students and pharmacy experts showed that three items were in

disagreement, which were *providing appropriate recommendations based on Indications, efficacy, adherence, safety, and cost-effectiveness* at .017, *verifying the patient's understanding of new information provided* at .046, and *working with patients to schedule the doses* at .039. Last, comparing the pharmaceutical science students and pharmacy experts showed that two items were in disagreement, which were *emphasizing key information* at .020 and *providing reasons for advice* at .008.

For *emphasizing key information* and *providing reasons for advice*, the pharmaceutical science students rated the items significantly lower than the others, while the pharmaceutical care students agreed with the pharmacy experts. The next two items, which were *providing appropriate recommendations based on indications, efficacy, adherence, safety and cost-effectiveness* and *working with patients to schedule the doses*, revealed that the pharmaceutical care students thought differently from the pharmaceutical science students and pharmacy experts, even though no difference can be pointed out when comparing the whole student population with the pharmacy experts.

Finally, *verifying the patient's understanding of the new information provided* indicated a scaling result. Although the whole student population seemed to disagree with the pharmacy experts on this item, the results showed that the pharmaceutical science students differed from the experts but did not differ from the pharmaceutical care students. This means that the level of agreement was different as in a scaling system. In other words, the pharmaceutical care students had the highest mean score at. 3.69, followed by the pharmaceutical science students with the second-highest ranking at 3.47, and the pharmacy experts with the lowest ranking at 3.24.

Out of the 37 items in the questionnaire, disagreement among the groups was found on 21 items after the ANOVA analysis, but the items were reduced to 19 after the Games-Howell *post ho*c analysis with 4 items eliminated. This resulted in 33 items from the questionnaire as relevant criteria to be included in the dispensing rubric (See Appendix). The students in the pharmaceutical care field viewed most of the criteria listed as more significant than the others as their scores were the highest among the groups for most of the items. The pharmaceutical care students viewed 9 items different from the pharmaceutical science students and pharmacy experts, who agreed on all of them, which were: *introducing your name to patients*, *calling patients by name*, *using correct English pronunciation*, *modifying communication to meet the special needs of patients*, *using open-ended and close-ended questions appropriately*, *asking questions to assess the patient's experience with medications currently being taken*, *providing appropriate recommendations based on indications, efficacy, adherence, safety, and cost-effectiveness*, *verifying the patient's understanding of the new information provided*, and *working with patients to schedule doses*.

Thanking the patients was the only item that was viewed differently among the groups. The opinion on how important this item was can be ranked at three levels,

with pharmacy experts at the highest, followed by pharmaceutical care students, and pharmaceutical students at the lowest. In addition, two items that the pharmacy experts did not rate as important as the pharmaceutical care students, who had the same stance as the pharmaceutical science students, were *identifying yourself as a pharmacist* and *using correct English language*. The pharmaceutical science students viewed three items differently from the pharmaceutical care students and pharmacy experts, who agreed on all of them, which were *offering a warm greeting*, *emphasizing key information*, and *providing reasons for advice*. Some of the items were viewed differently between the pharmaceutical care students and pharmaceutical science students, but the two groups did not view them differently from the pharmacy experts, which were: *asking if there is anything else the patients would like to discuss*, *giving patients opportunity and time to talk*, *asking for a complete record of the patient's current health conditions and therapies*, and *asking questions to assess the patient's understanding of key information about medications*.

Discussion and Conclusion

A needs analysis can decrease the researcher's bias by including various stakeholders in the development process (Huhta, 2010). Although some studies (Aliakbari & Boghayeri, 2014; Edwards, 2000; Tsou, 2009) preferred to analyze the needs on only students and some (Basturkmen & Shackleford, 2015) focused on the students and the language instructors, the needs analysis through the interview with informant specialists and the students can help generate various insights and verify the literature review to initiate the tasks. Likewise, the task development tended to include at least three groups of stakeholders including professionals in the field, professionals in the educational environment, language experts, and the test-takers (Grice et al., 2017; Johnson & Riazi, 2017; Luka, 2008; Macqueen, Pill, & Knoch, 2016). The more detailed the needs analysis is, the better the language teaching program is to serve students with a more favorable outcome (Long, 2005). Employing both students and professionals in the work and educational fields aimed to generate more precise content for the task.

It is clear that the pharmacy experts did not pay as much attention as the pharmacy students to *using correct English language*, while the students in both fields strongly believed in the importance of this item. This may stem from their experience in dispensing drugs in English assuming from the response that the English usage of these pharmacists is not always grammatically accurate when dispensing drugs to patients, but they can still offer service to patients. This led to the concept of the appropriate English proficiency level that the students should have when graduating from university. Currently, the Thai government sets a standard English level for Thai graduates at the B2 level, which might be appropriate considering the ability explained in the CEFR can-do statement for qualitative aspects of language use (CEFR, 2018) as the description of the interaction section indicates below.

Can initiate discourse, take his/her turn when appropriate and end a conversation when he/she needs to, though he/she may not always do this elegantly. Can help the discussion along on familiar ground confirming comprehension, inviting others, etc.

Various classifications among academic disciplines have long been acknowledged (Jones, 2011). Based on the attitudes of the two groups of the students, this study concluded that they held different degrees of attitudes. This is in line with Linnenluecke, Russell, and Griffiths (2009) who suggested that a multi-culture can exist within the same organization. It is asserted by Lee (2007) who mentioned that the institution and the discipline can result in sub-culture. This can be found in significantly different views of pharmaceutical science students and pharmaceutical care students on servicing the patient although the pharmaceutical science content is the same for both departments until the fifth year, which was the time the data was collected. It is speculated that the students' work attitude was affected by the department they are in regardless of the same content facilitated. Pharmaceutical care students rated the items higher than the other groups since they were groomed to the role of dispensing drugs in drug stores. In contrast, pharmaceutical science students are trained to work in the drug industries which do not seem to require the students to perform in terms of service-minded skills. Considering service-mindedness, it is worth noting that the training for pharmacy students may need to be improved in terms of quality of service-mindedness, especially pharmaceutical science students, who did not view offering a warm greeting as high as pharmaceutical care students and pharmacy experts. This result agreed with Austin (1990) who stated that the culture of the discipline can mainly contribute to the identity of the member. The culture of the field the students are in might reflect their thoughts on how important the criteria are in performing the task.

In order to communicate successfully, a person needs to apply their language capability, their cognitive, and their non-cognitive skills for a certain context (Elder, McNamara, Kim, Pill, & Sato, 2017). To achieve such result, a joint cooperation between the fields is necessary. Implementing the topical knowledge that involves knowledge in the specific field needs cooperation from the specialist informant (Douglas & Myers, 2000; McNamara, 1996). Yet, it is challenging to balance the content and the language. Although the study avoided the work sample approach which is not attentive to the linguistic factors, pharmacy experts did not view using correct English language and pronunciation correctly as important as both groups of the students. This result from the questionnaire matches what Elder (2016) reported about the experts' view toward the assessment that it tends to differ from that of the linguists'. Similarly, Macqueen et al. (2016) stated that the experts do not have the ability to specify the needed linguistic criteria for the assessment.

As a matter of fact, the experts tend to use their knowledge and professionalism as their baseline while the linguists rely on the language and communication aspects

(Douglas & Myers, 2000). The professionals have a tendency to award a greater score ratio to their content knowledge than linguistic detail (Byrnes, 2008). Thus, using the expert's judgment alone in assessing ESP assessment does not fit the construct of assessing the linguistic ability in the content to which it belongs. The development of ESP assessment with proof of validity needs collaboration between content teachers and language teachers in order to balance their joint interest.

However, such collaboration may be hard to establish as not much interaction between these disciplines were originally formed (Arnó-Macià & Mancho-Barés, 2015). It is vital for a course developer to extend the relationship to the professionals in the fields. In fact, decent educational practice can occur when the collaboration and the understanding between the content and the language instructor can be compromised (Brennan & Naerssen, 1989). One method to ease the process is that the university and the faculties engage in and assign voluntary persons who could be responsible for such consultation.

Recommendations

In the present study, the content experts focused on the content needed for the target use situation through their experience, while the students were still striving to perfect their overall dispensing skills as part of their goal is to pass the license exam. Students' opinions cannot be used solely without the expertise of professionals in the field and vice versa; thus, conducting a needs analysis should involve both professional stakeholders and students. Nonetheless, the disagreement between the students and the experts can complement the needs in other aspects. Additionally, the department in which the students study can reflect their work attitude even if the students are taught the same content and attend the same classes for five years. Although much of the previous research has supplied suggestions about which criteria to assess, adopting content from the literature review alone will not lead to the justification of which criteria may fit a particular context. In other words, investigating local needs can truly pinpoint the content relevant for the learners' needs.

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