

〈Other (project introduction)〉

Developments in the Pharmacy English Program

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Introduction and Background

It is important for pharmacists to communicate not only with customers, but also with other pharmacists and members of the health profession. Although English language skills and communication skills are not the same, good English skills are the necessary for good communicative ability when the language is used (Stupans, March, & Elliott, 2009). This is especially relevant to the fields of medicine and pharmaceutical sciences, due to the crucial role they play in society, and the necessity to present clear and accurate information. In the scientific community, English has become the lingua franca, with 80 percent of all journals in the Scopus database being written in English (van Weijen, 2012). While researchers continue to publish in their own language, it seems that for their work to reach a global audience, they would be well advised to publish in English.

As tourism continues to rise in Japan, the country's pharmacies and drug makers are working to facilitate communication with visitors who speak little or no Japanese (Japanese Pharmacies and Drug makers, 2017). This will be critical in 2020, when Japan plays host to the Summer Olympics, and is expected to see 33 million visitors arrive that year. A vast majority of these visitors will have little or no knowledge of the Japanese language, but likely have some level of ability to communicate in English (Maennig, 2017).

Additionally, Japan is experiencing a declining and ageing population, and is looking at immigration as a possible way to ease the social and economic burdens resulting from this problem. If Japan does choose to relieve its woes through immigration, it could face the same problems as Germany after the fall of the Berlin Wall, when an influx of immigrants to the country led to problems relating to insufficient German language ability (Menju, 2017). To prevent this situation from happening in Japan, measures must be put into place that help new arrivals learn Japanese, and bring Japanese nationals to an acceptable level of English language ability. As Morita (2015) states, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) claims that English language education is crucial for Japan in order to be part of the growing global community. He continues, saying that while English is a compulsory subject for six years in Japanese secondary schools, the reality shows that as of 2015, Japan ranked second-lowest in TOEFL scores among all

Asian countries. If Japan is sincere in its quest to become more internationalized, more attention must be paid to both English curriculum and instruction.

At present, students in the Faculty of Pharmaceutical Sciences at Josai International University (JIU) are required to complete three General English (GE) classes for six credits. These classes follow the same university-wide curriculum offered to students in all faculties. The curriculum focuses on basic skills and functions found to be important for everyday English communication. These skills and functions are important for basic English competence, but they do little to facilitate the language needs of students studying pharmaceutical science. The rationale for creating a specialized program stemmed from the realization that students in the faculty were not being exposed to the kind of English that was needed in their profession. Therefore, in conjunction with the Center for Language Education at JIU, a single, two-credit elective course was developed and offered in the fall of 2016. Students attended three 90-minute classes every Saturday for 10 weeks. Instruction duties were split between two teachers, each teaching 15 classes. Content dealt with symptoms and diseases, over-the-counter and prescription medications, disease prevention, and homeopathic alternatives. Assessment was a combination of written tests and oral presentations based on the content. Of the 35 students who registered, all but three had dropped out by the end of the course.

The purpose of this paper is to present an overview of the ESP (English for Special Purposes) program for students in the Faculty of Pharmaceutical Sciences at JIU, and answer the following questions:

How well does the current ESP program reflect the existing Second Language Acquisition (SLA) literature regarding curriculum and vocabulary acquisition?

What can be done to improve the program in the future?

Literature Review

Curriculum development

Curriculum development is an interconnected set of processes that involve the design, revision, implementation, and evaluation of educational programs. Curriculum determines what knowledge, skills, and values will be taught to the learners. Second and foreign language learning curriculum development is a practical and organized activity. The goal is to enhance the quality of both teaching and learning through methodical planning, development, and review of all aspects of a language program (Richards, 2001). Nation and Macalister (2010) add that within these processes, a number of factors need to be taken into consideration. These include, but are not limited to, what the learners do

and do not know, available resources (e.g. time, space, materials, etc.), the teachers' skills, and basic principles of teaching and learning. These factors will influence the decision-making process when designing the curriculum.

In Table 1, Brown (1995) describes a system of curriculum design whereby designers are able to create a language curriculum based on five key elements.

Table 1 *Elements of Language Curriculum*

Element	Description
Needs analysis	Gathering information that will act as the foundation of the curriculum. Specifically, what language forms will be most beneficial for learners.
Goals and objectives	Stating the overarching goals (e.g. writing a term paper) and the specific content or skills objectives that will help to achieve the goals (e.g. finding academic journals in the library). These are based on findings from the needs analysis.
Testing	Developing tests based on the stated goals and objectives.
Materials	Adopting, adapting, or developing materials, taking the above elements into consideration.
Teaching	Deciding how to present the material and what techniques and exercises to employ.

(Adapted from Brown, 1995)

If a language program is to be successful, there should be a needs analysis. There is an abundance of resources from which the designers can cull information. Activities such as distributing questionnaires, interviewing subjects or those knowledgeable in the field, testing, observing and analyzing, and reviewing pertinent literature are some of the more common methods by which student needs can be determined (Brown, 1995; Nation & Macalister, 2010; Richards & Schmidt, 2002). Such investigation can help shed light both on what students need and what they want. Once student needs have been established, each step should advance the decisions made in the one prior to it. Goals and objectives should lead to what students need, tests should measure the students' ability to achieve

objectives, materials should promote the objectives, and finally, teachers must figure out a way to present the materials in a fashion that will help the students on tests.

One major decision that can be affected by the needs analysis is what approach to take. An approach decides what and how students will learn. There are many approaches to take toward teaching (e.g. audiolingual, direct, communicative, etc.). What approach to follow depends on what theories and preconceptions the teacher has going in. Approaches that are based on behavioral psychology like the direct and audiolingual approaches, depend on a seemingly unending procession of various drills, which can be a daunting task for teachers to implement (Paulston, 1970). Others, such as the communicative approach, adhere to a more sociolinguistic school of thought, but remain, nonetheless just as challenging to follow (Karavas-Doukas, 1996).

Throughout the design process, there should be ongoing evaluation of the five elements and how they interact with one another. Information should be gathered continuously and analyzed to help understand what, if any, changes need to be made. The evaluation process can be done by the designers of the curriculum, an unbiased third party, the individual teachers, or a combination of the three. In the end, for evaluations to be effective, there must be an open attitude toward new ideas and change (Kiely & Rea-Dickins, 2005).

Vocabulary acquisition

Vocabulary acquisition is important for language learners, but it's only one sub-goal among other, often more imperative goals. This is not to say that the importance of vocabulary study should be minimized, but rather it should fit naturally within a larger curricular framework (Nation, 2013). Based on his research, Nation (2007) promotes four major strands in which vocabulary should be taught in a language course (Table 2).

Table 2 *The Four Strands of a Language Course*

Strand	Description
1. Comprehensible and meaningful input	Reading and listening activities focus on meaning, and contain a low number (<3%) of unknown vocabulary.
2. Meaning focused output	Learners have opportunities to produce the language through speaking or writing activities where focus is on the information being conveyed.
3. Language-focused instruction	Vocabulary is taken from context and directly taught, studied, and learned.
4. Fluency development	Learners work with known vocabulary to increase reception and production.

(Adapted from Nation, 2007)

Of these strands, language-focused instruction has been the most debated. Krashen and Terrel (1995) feel that decontextualizing language forms takes the spotlight away from meaning, which, the authors state, is tantamount to successful language acquisition. Some put a higher level of importance on instruction, and believe that learners cannot become highly proficient unless language is, to some degree, directly taught both in and out of context (Ellis, 2001; Bourke, 2008). Others feel that occasional focus on language (through correction, negative feedback, recasts, etc.) can be beneficial for learners, as long as it doesn't take too much away from meaning-focused instruction (Long, 1991; Long & Robinson, 1998).

Program Observations

This paper will present an overview of the ESP elective program designed for students in the Faculty of Pharmaceutical Sciences, rather than the GE program offered to all students at the university. At present, the program consists of a single, 15-week course offered fifth period on Thursdays and Fridays. No definitive reason was given for changing from Saturdays to weekdays, but one might assume that Saturday classes did not fit well with students' schedules. The dense schedule also forced students to study for four-and-a-half hours each Saturday. Sakai and Kikuchi (2009) note that course organization can play a role in student demotivation. The intensive nature could have been more than many of the students could handle, leading to their dropping the course. Nevertheless, the

number of students completing the course increased, with 26 students registering and only nine students dropping out by the end of the semester. Additionally, the course was taught by a single teacher who was also responsible for its curriculum, and was not involved in the original course.

Curriculum

Looking at Brown's elements which were detailed earlier, we can see how well the current program echoes this theory of curriculum design.

Needs analysis

Due to time constraints, a thorough needs analysis could not be performed. There were discussions between the teacher in charge and a professor from the Faculty of Pharmaceutical Sciences, which resulted in a decision as to what the students needed. They felt students were most in need of vocabulary development regarding common OTC medicines, diseases, and symptoms. The teacher then performed an Internet search in conjunction with a literature review, collecting and narrowing a list of the most commonly used vocabulary items relevant to the stated needs. The ability for pharmacists to interact with customers in a professional manner and accurately disseminate information was also added to the list of needs, thereby leading to the decision to adopt a communicative approach, although the teacher would later abandon a strict adherence to this approach.

Goals and objectives

The creation of the course goals and objectives (see Appendix) was a relatively easy process. The number of goals and objectives were limited, so students would not feel overburdened, and have a better chance of achieving the goals. Goals directly reflected the stated needs, and objectives were written using language which established observable performance (students will be able to name...), conditions (25 OTC medicines), and criteria (60% accuracy). Assessment for the criteria was left to the teacher's discretion.

Testing

There was a mid-term and final testing period. Each included a speaking test and a writing test. All tests were criterion-referenced, and developed by the teacher. Students were aware of what language would be tested, as well as what format each test would take. Speaking tests were conducted between the teacher and individual students. Students played the role of a pharmacist, and the teacher played a customer. Students followed dialogue patterns and used language that had been studied in the textbook. Speaking tests encompassed greetings, asking about symptoms, prescribing an OTC medicine, giving directions and warnings, and closing the conversation.

Written tests consisted of matching, fill-in-the-blank, true-false, and multiple choice exercises. Items in the tests came directly from the textbook. Students performed well on all tests, with a 100% pass rate.

Materials

The teacher decided to use a textbook suggested by the faculty liaison. There were three main factors which led to this decision. First, there was insufficient time to properly develop materials, which meant that existing materials would be needed. Second, using a textbook relieved the designer of having to deal with syllabus design. Finally, the teacher's lack of experience in teaching the content made it difficult to ensure that proper materials could be created and developed.

The textbook itself was an easy choice. As there are not many ESL/EFL textbooks which deal with pharmaceutical medicine, the options are limited from the start. Of the textbooks available to choose from, even fewer were at a level appropriate for the students in this course. The chosen textbook met nearly all the stated goals and objectives, and presented them in a pre-designed syllabus which fit easily into the course schedule. One last benefit was that the presentation of language and activity design in the book made it easy to develop tests and other assessment tools.

Teaching

The teacher's awareness of how the program fit into the university's system, and understanding of the students' levels and expectations permitted focus to remain on instruction. The main concern was how to best present the material and allow students to practice the language. Activities such as group discussions and role plays fostered communication and helped to act as assessment tools for student performance.

The decision to follow a communicative approach meant that activities needed to push meaningful communication and language use. Because the course dealt with specific content and language dealing with the students' field of study, students were able to see relevance and importance of the language being learned. However, as mentioned earlier, the teacher often felt the language could best be presented through activities influenced by other approaches. This involved incorporating transformation and substitution drills (audiolingual approach) into the lessons to promote fluency, and using English as a lingua franca, where language function takes priority over form.

Vocabulary acquisition

The number of vocabulary items needed to be learned was large. Students felt driven to memorize vocabulary, mostly out of context, by means of self-made flash cards and lists. Written tests show that students did manage to learn a lot of new vocabulary. However, it became a problem when students

needed to use certain items in a communicative situation, but could not.

Since the vocabulary element of the course was implemented using the Nation's four strands, it will be evaluated here by those same measures. Much of the vocabulary was associated with pharmaceutical medicine and health sciences. As such, items were often difficult or at the mid-to-lower end of the frequency spectrum. Even when activities presented items in a meaningful manner, there were often several items (>30%) unknown to the students. This was notably apparent when students were given actual scientific articles to read and summarize.

Students were given multiple chances in each class to practice the language. Exercises were designed to present the language in a meaningful manner, and the activities in the textbook were excellent opportunities for students to use what they had learned. As mentioned above, there were many times when items were presented in a meaningful way, but their difficulty or low frequency often hindered output.

Given their difficulty, it was often necessary for the teacher to focus on a particular word. This was usually done by translation or explanation of the word's meaning in simplified English. If students were involved in a communicative activity and used a linguistic form incorrectly, the teacher would use correction or negative feedback to direct attention to the error. This was preferable to a detailed explanation because it minimized disruption, and students could immediately return to focusing on meaning. Students seemed to prefer direct teaching of an item, as it proved to be less cognitively demanding, and it followed the style of teaching they had received in junior high and high school. That is not to say students didn't see the value of meaning-focused instruction, but they often found direct teaching to more efficient.

Communicative activities were recycled frequently in order to give students the chance to practice using the language repeatedly. The teacher developed different activities using the same linguistic forms so that students could practice the same language without feeling as though they were doing something which they had done before. Over time, students were observed to not only use one form of the word in a fluent and meaningful manner, but in other forms as well (e.g. correctly using "scratch" as both a verb and noun).

Program Evaluation and Future Considerations

The only formal evaluation of the course was the university-distributed survey given to all students in all classes at the end of the semester. Results were favorable, but the survey items did not address any of the distinct aspects of the course, so their validity is compromised. The teacher did, however, make an informal evaluation based on observations of the perceived strengths and weaknesses of the overall program (Table 3).

Table 3 *Strengths and Weaknesses of the ESP Pharmacy Program*

Strengths	Weaknesses
Clear goals and objectives	Insufficient needs analysis
Materials	Vocabulary item difficulty
Testing of objectives	Testing difficulty
Opportunities for output	Meaningful output from students
Schedule of activities	Insufficient evaluation
Student achievement	Need for more classes

Even though the needs analysis was not as thorough as it could have been, it provided enough information from which to create straightforward and realistic goals and objectives. Objectives were stated using language which made for easy materials development and testing.

The materials were perhaps the strongest component of the program, as both the textbook and the teacher-developed materials were meaning focused, and presented in a way which allowed for fluency development. They incorporated the needed vocabulary, and did so in an authentic and natural manner.

At times, vocabulary difficulty hindered meaningful student output, but such issues were quickly resolved, and the instances for student output were plentiful, so occasional hiccups in language usage did not result in too much lost focus on meaning. Activities were scheduled so that students received the maximum amount of time to practice the language in different forms and situations. This was especially important, given the difficulty of much of the vocabulary.

Tests items matched the objectives well . All students demonstrated acceptable levels of achievement in their test performances, which is good, but may be an indication that the testing instruments were too easy.

An evaluation instrument was utilized, in the form of the general university survey, but the results do not offer enough information that would have direct benefit. The teacher evaluated each curricular component during the design process and made efforts to continue evaluation as the course progressed, yet there are still issues that need to be addressed.

What seems to be missing most in this program are additional courses. The strength of a program is truly in the sum of its parts. One class cannot possibly encompass all the linguistic needs of students. Since this is an ESP program, different classes should concentrate on specific aspects of language related to their major. As the program matures, additional courses will be needed. One example would be to develop a class where students read and discuss scientific articles in English. Another class

would teach students how to write them. In any case, more classes should be created which will give students a wide range of linguistic content, while offering a narrow focus.

A proper needs analysis should also be completed. This would include performing interviews with faculty professors, pharmacists, and other experts in the field. Testing students would offer a lot of information as to what their weaknesses were, and to what degree. Students should also be asked what they feel they need to learn, and how they think they can best learn it. As always, a continuous review of the literature will provide current understanding of what is needed, in addition to the theories upon which EFL is based.

Teaching English communicatively is good, but it should not be done at the expense of other activities which may present the language as an independent form. Chaining a curriculum to one approach may actually do more harm than good because it does not allow for opportunities to look at language in a different light. A more eclectic approach should be followed, taking those features which work best within the framework of the curriculum and using them to their fullest.

For many students, engaging in meaningful output is extremely difficult. Students need to be given as many opportunities as possible to use the language and become comfortable doing so. Difficulties in output can be traced to many culprits. Affective variables, learning disabilities, difficult linguistic forms, and the surrounding environment are only some of the reasons why students are not able to produce. Careful observation will help to determine possible causes. There are also questionnaires which can identify issues such as learning anxiety or other disorders. Diagnostic testing can also show what linguistic items are difficult for the students. As a result, the teacher can provide extra attention to their instruction.

The purpose of a test is to assess whether or not students are achieving the objectives. As student needs change, so will the objectives, which means that tests will need to be revised. Tests should also challenge students and push them to the best of their abilities. If all students are performing above the minimum acceptable standard, the likelihood of test items being too easy is high, and an evaluation of the test instrument should be performed.

A system of evaluation needs to be put into place. Personal observations by the teacher can help, but if the problems are unobservable, then they will continue to reduce the quality of the curriculum. Designers need to look at each piece of the curriculum and see how it functions both on its own, and as a part of the whole program of study. Instruments of evaluation which target the unique qualities of the program must be created and properly implemented.

In conclusion, although the ESP program for students in the Faculty of Pharmaceutical Sciences is still young and incomplete, there is an established curricular framework from which to grow. With additional courses and needed modifications, the program can develop and offer an English curriculum that will give students the skills and ability to perform effectively in their field.

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Appendix

Goals and Objectives for Pharmacy ESP Course

Goals	Objectives
Students will be familiar with common OTC medicines	<ul style="list-style-type: none"> • Students will be able to name or write the 10 most common OTC medicines from memory with 80% accuracy. • Students will be able to describe the purposes of the 10 most common OTC medicines with 80% accuracy. • Students will be able to describe the effects of the 10 most common OTC medicines with 70% accuracy. • Students will be able to explain the directions for any OTC medicine prescribed for the 10 diseases found in the textbook with 60% accuracy. • Students will be able to describe warnings and side effects of the 10 most common OTC medicines with 60% accuracy.
Students will be familiar with common diseases	<ul style="list-style-type: none"> • Students will be able to name or write the 10 diseases presented in the textbook with 100% accuracy. • Students will be able to correctly pronounce the 10 diseases presented in the textbook with 100% accuracy. • Students will be able to differentiate between diseases with common symptoms with 60% accuracy
Students will be familiar with symptoms of diseases	<ul style="list-style-type: none"> • Students will be able to identify and describe the symptoms of the 10 diseases presented in the textbook with 70% accuracy. • Students will be able to correctly pronounce 20 symptoms presented in the textbook with 100% accuracy.

Students will be able to effectively communicate with customers in a pharmacy setting

- Students will be able to use functional phrases from the book in a communicative manner with 80% accuracy.
 - Students will be able to comprehend what the customer is saying with 80% accuracy.
 - Based on described symptoms, students will be able to prescribe the correct OTC medicine with 60% accuracy.
-