Developmental Education in a Thai University

Catherine Owens, Robert Burgess and Peerasak Rojana-apichatsakul
The School of Liberal Arts, Shinawatra University

Abstract

Non-native English users enter English medium programs at universities in Thailand under-prepared for the coursework required of them. Research conducted during academic year 2012 determined the academic and linguistic skills demanded in the undergraduate curriculum at a small private university in Thailand. Faculty and student respondents agreed on the importance of skills demanded to a large extent. Findings show that skills ranked highest by both faculty and students are those that need explicit teaching. The curriculum may be strengthened by building on results of the research by using two methods: 1) mapping skill development onto General Education course syllabi and 2) creating an academic development center to provide learning support.

Keywords: *academic skills, best practice, curriculum mapping, developmental education, learning support*

1. Developmental Education in a Thai University

Entering a college or university requires a large adjustment for most young adults. The combination of a new physical environment, new social roles, new freedoms and obligations can be overwhelming. This new environment can lead to uncertainty and anxiety (Elias et al, 2010; Kuh et al, 2010; Chaves, 2006 in Webster & Showers, 2011). Unacknowledged or un-rectified cognitive, affective or social gaps may negatively affect students' academic work. Many western universities recognise that a well-designed intervention can address these issues (Krause et al, 2005; Kuh et al, 2010; Thomas, 2012). This intervention is usually a form of developmental education, which offers academic and non-academic support for first year university students. The practice of developmental education has a firm foothold in North America, the United Kingdom and Australia, where developmental education programs are widely implemented

across colleges and universities (Kuh et al, 2007; McInnis, 2010; Thomas, 2012). In comparison, Thai universities do not have a strong commitment to developmental education in support of student achievement. Although many Thai universities offer upgrading and English courses to the public in the form of continuing education, support for undergraduate student learning development is not as noticeable a feature. The combined teaching and learning experience of the present authors at six Thai universities indicate that support given to student learning skills and development is ad-hoc and informal (see Table 1). Where there is a self-access learning resource center, it is not necessarily staffed by trained learning specialists. From the Office of Higher Education Commission, which oversees quality assurance in Thai higher education, neither policy documents nor assessment criteria include developmental education. Given that the trend of Thai universities in the past decade has been to open international or English medium programs, it is a priority to institute support for students with weak academic skills.

Table 1: Selected Thai universities' facilities for developmental education[1]

University	Learning Support Centre	Tutoring & Workshops	Faculty Develoment	Counseling/ Academic Advising	Writing Centre	Testing prep & support
Chiang Mai	(for English)	yes				yes
Chulalongkorn	(for English)	yes			yes	yes
Khon Kaen						
King Mongkut's University of Technology Thonburi	(for English)			yes	yes	
Mahidol	(Int'l Program Prep Year)	yes		yes		
Naresuan	(for English)		yes			
Prince of Songkhla	yes		yes			
Sri Nakharin Wirote	yes					
Suranaree	(for language)	yes		yes		
Thammasat			yes			yes
University of the Thai Chamber of Commerce		yes	yes	yes		

[1] data derived from authors' surveys of the universities' English and Thai websites

An English medium of instruction program imposes an additional cognitive burden on new entrants, both in terms of content delivered in a second or foreign language, as well as unfamiliar educational standards and different learning expectations (Andrade, 2006). As a result, many students face difficulties in English medium studies. Students who seek English medium instruction but opt to study abroad find study support and foundation learning services not only available, but, in most cases, required (US Department of Education, 2011; Thomas, 2012; Australian Education Network, 2014). In the Thai university under investigation, the students in English medium of instruction courses are not given academic support, remedial courses or workshops to ensure success. For Thai universities to attract foreign students and to accommodate native students in their international programs, the provision of academic development and support is necessary.

New entrants to the Thai university analysed below (here named IUSTA) face a first year that poses adjustment demands: in every intake, there is a wide range of English language abilities, a variety of backgrounds and expectations about tertiary education, underdeveloped information literacy skills and, for the foreign students, the destabilizing effect of transition to a new culture, a new school and new friends. The students at this university come from a variety of national education systems including those of Bhutan, Myanmar, China, Nepal and Thailand, among others. Their English language skills vary, with noticeable weaknesses in academic reading, writing, listening and note-taking. Appendix 1 shows the scores on the in-house Academic English Proficiency Test of the 2012 and 2013 intakes. These students use information technology for social purposes but their classwork shows inadequate academic use of IT resources. Like their counterparts around the world, these freshmen need training in information literacy, web searching, word processing, file management and use of spreadsheets (Brage & Svensson, 2011; Sharma et al, 2011). Additionally, the ability of new entrants to adjust smoothly and become academically productive is hampered by the fact that many entering freshmen are living away from home for the first time, as this is a residential university, and they often have few insights into the expectations of campus life and how to meet them. The university provides new entrants with orientation activities lasting approximately one month. These exercises are predominantly social and aimed at forming a cohesive cohort, so that newcomers are made to feel welcome to join the group. New freshmen receive an introduction to campus facilities, operational and safety procedures, rules, and behavioural advice. Academic counselling occurs during a meeting with the student's chosen school, when faculty advisors inform new students of the school's expectations, along with an overview of departmental aims, goals and accomplishments.

All freshmen students experience adjustment problems to some degree (McInnis, 2010; Webster & Showers, 2011). To mediate those problems, universities need policies, personnel and academic support structures in place. The advent of the ASEAN Economic

Community gives Thai universities a focus for internationalizing their programs, one aspect of which is the need to provide academic support. This paper provides data to make the case for an institutional plan to specifically address the developmental issues that incoming students face every semester. Such interventions would not only improve retention and success rates, but would also promote a student-centered learning environment, which the IUSTA administration has explicitly called for.

The authors have observed that a number of freshmen lack academic abilities, including:

- self-direction and goal-setting
- applying cognitive skills to learning needs
- applying affective skills to learning needs
- taking and using notes from readings and lectures
- using information technology for learning

An observed lack of academic skills among freshmen as well as the low level of English proficiency among some of them led to this investigation of IUSTA's learning environment. Best practice in developmental education provides the impetus, along with two of the present authors' previous experience in universities that provided academic support for new students. The study aimed to get a better understanding of the academic requirements across the curriculum through an inventory of course demands. From this data, two goals might then be achieved: one is to map learning skills to specific courses, and the other is to identify structures, policy and facilities for academic skill support and development.

To begin to shape the investigation, the following research questions were asked:

- what are the academic needs/requirements of the undergraduate curriculum at IUSTA?
- what are the linguistic needs/requirements of the undergraduate curriculum at IUSTA?
- what support systems need to be in place to assist students in their adjustment to the undergraduate curriculum at IUSTA?

2. Literature Review

Developmental education has a long history in American tertiary education. Arendale (2002) cites Curti and Carstenson's account of the University of Wisconsin's use of a college preparatory program in 1865. Higbee, Arendale & Lundell (2005) trace the foundation of modern developmental education to a 1937 report by the American Council on Education. Cross (1976) believes that developmental education is grounded in the 1965 Higher Education Act, which opened the doors of higher education to non-traditional students.

Developmental education programs are now firmly established as a key part of academic success and retention (Habley et al, 2012). Kuh et al (2010, p. 79) claim, "For example, the Pell Institute (2004) found that institutions with high graduation rates had more programs that eased new students' entry and adjustment to college, including bridge programs, learning communities, study groups, block registration of students, and tutoring". Many college students in the United States enter their institutions without prerequisite knowledge and skill in one or more content areas (US Department of Education, 2011). Universities in the US have responded to this reality with supplemental instruction, remedial courses, academic support and curriculum adjustments. Not only do these programs address a known feature of the population, they also prevent learning problems from escalating and they build institutional integrity, turning slogans that profess a student-centered policy into action. As Casazza stated in 1999, universities offer nothing more than a "false opportunity" unless they provide the means for students to succeed. Developmental education systems can be seen as complementary to quality assurance by encouraging the implementation of best practice across the institution.

2.1 Tertiary Education Best Practice

Best practice in tertiary education has been based largely on work by Chickering and Gamson in 1987 (Kuh et al, 2010; Thomas 2012). They report that good practice:

- encourages student-faculty contact
- encourages cooperation among students
- encourages active learning
- gives prompt feedback
- emphasizes time on task
- communicates high expectations
- respects diverse talents and ways of learning

2.2 Developmental Education Best Practice

The field of developmental education incorporates Chickering and Gamson's (1987) articulation of effective learning, making these practices integral to the field. The Council for the Advancement of Standards (2011, p.6) outlines developmental education best practices that:

- ensure that students are the central focus of the program
- assist students in achieving their personal potential for learning
- introduce students to the academic expectations of the institution, the faculty members, and the culture of higher education
- help students develop positive attitudes toward learning and confidence in their ability to learn
- foster students' personal responsibility and accountability for their own learning

- provide a variety of instructional approaches appropriate to the skill levels and learning styles of students
- assist students in applying newly learned skills and strategies to their academic work
- support the academic standards and requirements of the institution

Models of Learning Assistance Programs should also share the following common goals:

- provide instruction and services that address the cognitive, affective, and socio-cultural dimensions of learning
- provide to faculty members, staff, and administrators, both services and resources that enhance and support student learning, instruction, and professional development

In the United States, developmental courses are usually considered to be college level and credit based. Developmental education programs are often incorporated into the university as separate departments, sub-departments, or elements of core curricula, which are implemented under a number of guises. They may be called First Year Programs, Freshman Studies, Foundation Classes or Writing Centers. The most common courses requiring learning support are English, mathematics, and reading (US Department of Education, 2011). Other transition programs put more focus on study strategies, integration to the institution, or the freshman experience rather than a particular content area (Reason et al, 2006; Thomas, 2012). All serve the purpose to ensure that a diverse incoming population learns, in practical and directed terms, what their chosen university expects from them, in order to adjust to the new environment.

2.3 Structural and Operational Best Practice

Boylan, Bliss, & Bonham (1997) have identified specific components of the structural and operational practices of developmental education programs. The following practices have been associated with student success:

- centralized program organizational structure
- mandatory assessment of students
- mandatory placement of students
- availability of tutoring
- availability of advising/counseling services
- program evaluation

These program components suggest a set of actions and services that universities could use to provide academic support to undergraduate students. With these practices in operation for over twenty years in North American, Australian and British universities, results have shown increases in student retention and success rates (Kuh et al, 2010; McInnis, 2010; Thomas, 2012).

3. Method

3.1 Design

This study aimed to reveal the academic demands across the undergraduate curriculum at IUSTA. The research method used was quantitative, in that data were collected through individual surveys, then tabulated and correlated. Data represented both student and faculty perceptions of the academic skills and the language abilities their courses demand. The data were not tested nor were they subjected to statistical analysis other than frequency counts and correlation across the two groups of respondents. The study investigated two aspects of the IUSTA curriculum: academic skills and linguistic skills. The category of academic skills had four subsets: study skills, computer skills, critical thinking skills and interpersonal skills. The category of linguistic skills covered academic reading, writing, speaking and listening.

3.2 Subjects

This research project collected data from two distinct populations: the entire undergraduate student population and the entire faculty of IUSTA. The Admissions Department identified the student population as 213 undergraduate students enrolled in semester 2, 2012. The Department of Human Resources identified the faculty population as 37 full-time lecturers in semester 2, 2012. Two or three student names were selected from the class lists of each course being taught during the semester. It must be noted that some courses had a very small (one - three) student enrollment, as can happen with a small population needing specific courses to graduate. Fifty students responded to the survey. Researchers sent the entire faculty questionnaires by email, asking them to complete a questionnaire for each course they were teaching during the second semester of 2012. Faculty returned a total of 38 responses (a response rate of 49%).

3.3 Data Gathering Tools

Two separate, but closely aligned, surveys were developed as the data collection tools. These surveys are included in Appendix 2. The surveys came in two parts: 31 questions detailing academic skill demands in a course, separated into study skills, computer skills, critical thinking skills and interpersonal communication skills items, and 42 questions detailing language skill demands in a course, separated into sets of reading, writing, speaking, and listening items. The items chosen to investigate derive from learning strategies developed by Oxford (2011) and Chamot and O'Malley (1987) while academic English skills derive from content-based language course development (Snow & Kamhi-Stein, 2002). All questions were in English and required Yes/No answers; two of the language skills questions asked for the number of pages required in weekly

reading and term paper writing assignments. The questionnaires differed only in the subject of the verb, i.e., the faculty questionnaire asked, "Do you require your students to...?" whereas the student questionnaire asked, "Does your teacher require you to…". In addition, the faculty survey contained a column in which the faculty member was asked to estimate the number of students who demonstrated the itemized skill or ability.

Two student research assistants (RAs), both second year students with native-like English, educated in English medium schools in Nepal, volunteered to pilot the student form of the survey by providing data on one of their current courses. As a result of their feedback, ambiguities in wording or misperception were identified and the questions were revised for clarity. The same RAs then had approximately one hour of training in the places and times for survey distribution and their roles as data collectors. The RAs reported that they understood the content and intention of each question.

3.4 Data Gathering Procedures

The research team along with two RAs collected data from faculty and students in the second semester of 2012, in December 2012 and January 2013. RAs collected data from student respondents while faculty researchers collected data from faculty respondents. The RAs typically approached groups of students in breaks during classes and explained the research goals. They asked students the questions, and either recorded the answers themselves by ticking the yes or no boxes or watched as the respondents completed the survey. RAs reported that each questionnaire took 15 to 20 minutes, as some of their respondents needed further explanation and/or language support. The questionnaire dealt with course demands such as "Read to prepare for exams" or "Use information from the Internet effectively", so the potential for RAs to mislead respondents or distort their responses was considered minimal. The RAs reported that student respondents were quite willing to complete the surveys and that they took the task seriously. Effort was made to collect student responses for all courses offered during the semester, though some courses were omitted, due to timing. However, data was collected from a sample of courses in each school.

The research team sent questionnaires to faculty by email attachment, and followed up with hard copies of the questionnaire sent to each departmental administrative assistant. The Deans and administrative assistants assisted in distribution and collection of the completed responses. The faculty questionnaire was accompanied by a cover page detailing the research project, what it aimed to investigate, with a confidentiality disclaimer, as well as by a course ID page, with the lecturer's name, school, course number and name. Secretaries were then canvassed for submission of completed questionnaires. Five of the faculty respondents chose to respond digitally. The others responded using hard copies of the questionnaire.

An issue occurred in the faculty surveys with regard to the estimation of the number of students who demonstrated itemized skills or abilities. Respondents largely ignored this measure. This impressionistic aspect of the questions did not produce usable data.

4. Results

The student and teacher responses were based on the courses offered in semester 2, 2012. The students and the faculty showed consistency in their affirmative responses to the Academic Skills category of questions (Students 65% / Faculty 68%) and there is a significant correlation (.001) between the answers by students and faculty to these questions. The students and faculty showed similar consistency concerning the Linguistic Skills category. Sixty-five percent of students and 66 percent of faculty answered affirmatively to those questions. There was a significant correlation (.001) between the student and faculty affirmative responses to questions in the linguistic skills category.

4.1 Academic Skills

The academic skills in the questionnaire were separated into four discrete sections: General study skills, computer skills, critical thinking and interpersonal skills. Nine questions focused on general academic skills required (or not) in the course. The top three ranked skills that students and faculty agreed were required in their courses were: Prepare effectively for exams (Ss 86%, R1; Fac 95%, R3)[2]; Follow instructions (Ss 82%, R2; Fac 97%, R2); and Use classroom activities and events to increase learning (Ss 74%, R3; Fac 97%, R1). Interestingly only 63% of faculty (R9) required the use of a textbook in their course and 57% reported that the students had a copy of that textbook. Sixty-four percent of students reported that a textbook was required (R6) whereas only 38% reported that they had access to the course textbook.

Of the nine computer skills listed, students and faculty agreed the top two required in their courses were: Use search engines and web browsers to find academic information (Ss 82%, R1; Fac 92%, R1); and Use information from the Internet effectively (Ss 74%, R2; Fac 74%, R2). There was also agreement by students and teachers in the two least required computer skills: Manage files (Ss 54%, R8; Fac 38%, R8) and Use spreadsheet software to reflect data effectively (Ss 40%, R9; Fac 16%, R9).

Six critical thinking skills were surveyed, showing students and faculty quite closely aligned in order of importance as illustrated in Table 2.

[2] Ss means Students; 86% means percentage of students responding "yes"; R1 means Ranked as first; Fac means faculty.

Table 2: Critical Thinking Skills

Skill	Ss %	Ss Rank	Fac %	Fac Rank
Use critical thinking to solve problems	82	2	95	1
Use logical reasoning when analyzing or developing an argument	76	3	89	2
Evaluate accurately the quality of their own work	86	1	87	3
Recognize their own knowledge weaknesses	68	4	86	4
Evaluate the quality of a peer's work	62	5	57	5
Evaluate a text for bias and subjectivity	54	6	41	6

The top two interpersonal communication skills that students and faculty report were required in their courses were: Work in groups (Ss 76%, R1; Fac 81%, R1) and Use empathic listening (Ss 74%, R2; Fac 68%, R2). The next items were ranked differently by students and faculty: Begin to identify communication weaknesses in selves (Ss 54%, R5; Fac 65%, R3); Use effective oral argument skills (Ss 64%, R3; Fac 62%, R4); Manage interpersonal conflicts effectively (Ss 60%, R4; Fac 41%, R5).

4.2 Linguistic Skills

The linguistic skills section was broken down into four discrete areas: reading, writing, speaking, and listening. Students and faculty agreed upon the importance of reading to prepare for exams (Ss 76%, R1; Fac 87%, R1) while reading for use in class discussions was ranked second in importance by students, but fourth in importance by faculty (Ss 72%, R2; Fac 81%, R4). There was also agreement that reading popular press or online posts was of relatively little importance (Ss 44%, R12; Fac 49%, R11) as was reading academic journals (Ss 38%, R14; Fac 32%, R13). It was interesting to see that while faculty rated reading outside sources on course topics as important (Fac 86%, R2) the students did not (Ss 52%, R10).

An attempt was made to identify the reading workload in courses at IUSTA. Eighty-two percent of faculty stated that reading was required in their courses. Of those, 67% provided an amount required per week. Nineteen percent required one to three pages, 24% required four to six pages, 19% required seven to ten pages and 38% required more than ten pages per week. Students did not provide any response to this question of the amount of pages required per week.

Both students and faculty felt that writing original work on assignments (Ss 90%, R1; Fac 71%, R3) and writing relevant texts that show their opinions (Ss 74%, R4; Fac 76%, R1) were important in their courses. IUSTA students and faculty both felt that developing a thesis statement/research question was not a focus of their courses (Ss 34%,

R14; Fac 24%, R14) nor was writing comments for online discussion (Ss 28%, R16; Fac 18%, R16).

We were also interested in knowing the quantity of writing required in courses at IUSTA. Fifty-five percent of teachers responded that writing was required for a grade in their courses. Of those responding affirmatively only 61% offered the quantity of writing required. Eight percent required less than three pages, 23% three to five pages, 39% six to ten pages and 31% more than ten pages. Students did not provide any response to this question of the number of pages.

Regarding oral skills, IUSTA students and faculty believed that asking pertinent questions, (Ss 86%, R1; Fac 84%, R3), speaking as part of class discussions (S 82%, R2; Fac 92%, R2), and speaking up when confused or needing clarification (Ss 80%, R3; Fac 97%, R1) were required in their courses. On the other hand, the requirement of mimicking what the teacher says (Ss 48%, R7; Fac 22%, R7) was least demanded.

The five listening skills surveyed showed students and faculty closely aligned in order of importance as illustrated in Table 3. The key difference was that students felt listening to the words and ideas of their classmates ranked first, while faculty felt that it was more important to listen to lectures and take notes. On this criterion, 76% of students felt that listening to lectures to take notes was required while 92% of faculty believed this to be true. Otherwise, the two groups ranked the skills in comparable orders of importance.

Table 3: Listening Skills Required

Skill	Ss %	Ss Rank	Fac %	Fac Rank
Listen to the words and ideas of your classmates	90	1	89	2
Show that you are listening by making comments	82	2	81	3
Listen to the lectures and take notes	76	3	92	1
Show you are listening by maintaining eye contact	76	4	70	4
Listen to outside sources (video/internet)	70	5	65	5

This divergence may be explained by a number of factors, including students' claimed interest in hearing each other's views in class, their lack of interest in lectures, or their need for interaction. The faculty perspective may be explained by the lecturer's belief that the lecture is the key learning event in class.

5. Discussion

The results of this study show how students and faculty agree on the academic and linguistic demands of the courses being studied during one semester at a small, private university in Thailand. Students and teachers agreed on the order of importance of 12 of the 31 academic skills. Both groups of respondents also agreed on the relative importance of 11 other academic skills. The two groups did not agree on the ranking of the remaining eight skills. The findings on linguistic skills demanded by their courses showed more variance. Students and faculty agreed on the order of importance of seven of the 42 linguistic skills required in their courses, found comparable levels of importance for a further 18 skills but ranked the final 17 skills at different levels of importance. It was expected that respondents would agree on general academic skills like "follow instructions" and "work in groups", or on the use of specific computing skills. But in the critical thinking skills section, students reported that "evaluating the quality of my own work" was the most needed skill, while faculty identified "using critical thinking to solve problems" as the most needed. Using critical thinking to solve problems might have been expected to rank highest among all respondents. An explanation for the students' lower ranking of this skill may lie in the observation that students hear about and talk about critical thinking, but have not developed a process for critical thinking. Of interest is that, in the interpersonal skills category, students ranked "begin to identify communication weaknesses in selves" as the least important, which seems to contradict their first ranked "evaluate the quality of their own work" in the critical thinking category. This suggests either they do not relate communication weaknesses with quality, or their ranking of importance is more influenced by the field of surrounding items. In the critical thinking category, it is noteworthy that both groups rated lowest in order of importance the same three skills: "recognize their own knowledge weaknesses", "evaluate a peer's work", and "evaluate a text for bias and subjectivity". Both faculty and students felt "evaluating a text for bias and subjectivity" was the least used skill in their courses, which leads to the question of the kinds of texts they are reading, and their level of information literacy. In the interpersonal skills section, agreement on the most necessary "work in groups" and "use empathic listening" skills is not surprising. The differing order of "begin to identify communication weaknesses in selves" (Ss 54%, R5; Fac 65%, R3) is explained by the observation that undergraduate students are not skilled in self-evaluation, (contradicting their choice in the prior category) while faculty might expect greater levels of self-awareness and improvement. Interestingly, students ranked "Use effective oral argument skills" as more used than faculty; the explanation may be that students actually see the need to express their views more effectively in class, while faculty are less aware of this need. The ranking of "manage interpersonal conflicts effectively" (Ss 60%, R4; Fac 41%, R5) indicates to the researchers that both groups may be less concerned with interpersonal issues than with classroom discourse.

Indeed, this is a skill that only becomes obvious when class activities allow for teams to demonstrate collaboration and cooperation, or the lack thereof.

The linguistic skills variance is of potentially greater importance. It is an essential requirement of an English medium program that students' reading, writing, speaking and listening skills are proficient. Of the 14 reading skills noted, students and faculty agreed that reading to prepare for exams was the most needed skill. The least demanded skills from the faculty perspective were "read academic journals on the course topic" and "read to use in an academic paper". Both groups seem to see the role of reading more for use in examinations than for writing. The implication of the rankings here are two: 1) faculty may not be emphasizing the importance of reading, and 2) reading outside sources may be less assigned.

When it comes to writing, the rankings of both groups suggest that writing demanded in courses must be original and should display students' opinions. Sixty-one percent of faculty report that an academic paper is demanded for their course, 70% of them require original work by students in written assignments, while, in academic skills, 70% of faculty report requiring their students to use appropriate strategies to avoid plagiarism. Four or five faculty members recorded no response in the entire writing category, suggesting the courses they taught that semester had no writing requirement. Rankings by faculty suggest they expect completed papers without demanding any of the pre-writing evidence, and the majority do not assign written analyses or reflections. This is explainable by the fact that the majority of the faculty are not language teachers. It also indicates a key area of concern for the language faculty, which is that faculty in non-language development courses expect non-native English speaking students to produce original writing.

The speaking skills section shows a significant amount of agreement on what is required in courses. "Asking pertinent questions", "speaking in class discussions" and "speaking up to get clarification" were rated in similar order by both teachers and students. Interestingly, fourth in order of importance by faculty was the skill of "speaking individually in class, i.e., giving an oral presentation". This suggests that these teachers use lectures as the main form of knowledge building. Mimicking the teacher's words was rated least important by both groups, which is not surprising as mimicking is largely a skill required in a language classroom in the checking of comprehension and pronunciation and the like.

The predominance of the lecture format is further corroborated in the listening skills category, where faculty rated lecture listening as the number one requirement, whereas students were more interested in listening to the words of their classmates. As suggested above, this may reflect students' inherent interest in each other over the words or ideas of the lecturer. It also suggests that a more interactive approach to learning may be what the students want.

6. Conclusion

The first two research questions focused on the academic and linguistic requirements of the undergraduate curriculum. The data generated answers in the form of rankings by students and faculty of the skills demanded in their courses. To put these findings to good use, the entire English language course component could be evaluated and reformed to provide support. In addition, given the required General Education (GE) component in all degree programs, it would be appropriate to map the needed academic and language skills onto the GE courses. Since these courses are essentially designed to broaden students' world knowledge, they provide an ideal locus for the inclusion of academic and linguistic content that support overall success (Arendale & Ghere, 2005). Systematically mapping the academic and language skills identified in this research to the syllabi of the GE courses would have clear benefits including: the fulfillment of curricular objectives as identified in the Total Quality Framework for IUSTA courses; the promotion of greater engagement with learning that is the hallmark of academic success; the development of positive attitudes to learning as students are given explicit instruction in overcoming personal weaknesses; and the foundation for lifelong learning. With the institution of a GE program-wide policy of achievement and maintenance of proficiency levels, students would feel better served by their GE courses and faculty would be able to assign and expect complex work.

The research findings also identified various aspects of reading as important in IUSTA courses. The Internet was specified as an important source of information. This clearly reflects a reality of modern education; the Internet remains a source of English language information accessible only with effective academic literacy skills. Academic literacy could be maintained through a sustained reading demand in the GE courses.

The research results regarding writing skills make it clear that students and faculty both see the need for writing original work and writing in support of an opinion. However, students need training to write original work. A common result of using the Internet as a source is plagiarism, as students do not clearly apply the rules of in-text citation. Also, they often struggle to make their thoughts clear in writing. A carefully designed writing syllabus spiraling through the GE courses can focus on organization, logic, style, development of argument, and the appropriate use of source materials.

The speaking skills section revealed that students need to ask questions, speak up when confused and speak in class discussions. There is great value in students speaking about the lesson during class, as it helps them test hypotheses and draw conclusions; it helps their classmates hear the ideas from another perspective, and it also helps the professor to see how well the learning is progressing. The demand of students to speak coherently in class requires early and directed instruction in purpose-built activities. GE course material provides the impetus to discuss topics of interest and to reflect aloud on

personal views.

The results show that both students and faculty see listening and note-taking as essential to the academic experience, especially in traditional lecture environments. Yet students are often under-prepared for the note-taking process. They often do not bring the basics to the classroom, a pen and paper for example. The GE courses could demand that students take notes for test application, writing and discussion of the lecture material.

The interpersonal skills identified as important in this study reflect best practice in tertiary education, one of which is cooperation among students, while developmental education best practice encourages the achievement of personal potential across the cognitive, affective and sociocultural dimensions of learning. Findings from this study show a clear recognition of the needs to work in groups, practice empathetic listening and listen to the ideas of classmates. A GE curriculum specifically designed to highlight the broad interpersonal skills needed for successful communication would address this goal.

Many of the above abilities are linked to critical thinking, another item identified by both faculty and students as an important part of their curriculum. Critical thinking skills can be explicitly taught and reinforced through the higher order demands of analysis, evaluation and synthesis of ideas, optimally introduced in the GE curriculum. With directed instruction and application of critical thinking techniques, students will expand their information literacy, by building their knowledge base for more accurate judgment of the validity of information.

Support Systems for Academic Development

The final research question asked what kinds of support systems are required to assist students in their adjustment to the rigors of the undergraduate curriculum at IUSTA. Best practice in developmental education argues for the provision of "...services and resources to students, faculty, staff and administrators that enhance and support classroom instruction and professional development" (CAS, 2011, p.6). Structural and organizational best practice argues for the availability of tutoring, advising and counseling as well as systematic student placement, assessment and evaluation. Kuh et al (2007) argue for the inclusion of student orientation programs that last throughout the first semester and give students experiential practice in study strategies, critical thought, exam planning and time management.

Results from the current study show that students and faculty are in general agreement on the demands for academic, computer, critical thinking, interpersonal, speaking and listening skills, and to a lesser extent, reading and writing skills. A centralized academic development center at this university would be one way to support students' use of

these skills. Such a center has a reading node to provide workshops in reading comprehension, a writing center to support writing skills, and a tutoring service to match strong students in a variety of courses with those who need help. It has academic advising and counseling to assist students with adjustment to university life. The cost to a university of students failing, dropping out and engaging in risky behavior is high in terms of reputation, revenue and morale. An effective counselor can often defuse such issues. An academic development center would also provide a faculty support unit, where professional development activities take place, research projects are discussed or presented, and small business plans can grow or incubate.

IUSTA has recently taken a significant step in developmental education by making students the focus of its program. The further steps outlined above can extend this focus to facilitate the development of an effective learning-based organization.

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Authors:

Corresponding Author: Catherine Owens has enjoyed building and managing programs worldwide supporting students in English medium studies. Her professional activities include language program design and development, program evaluation, teacher training and computer assisted learning. She has held teaching and administrative positions and is a strong advocate of effective communication across the curriculum. She can be contacted at The School of Liberal Arts, Shinawatra University, 99 Moo 10, Bangtoey, Samkhok, Pathum Thani 12160 Thailand, Tel: 089-936-0015; Fax: 0 2599-3351; E-mail: *owens.c@siu.ac.th*.

Robert Burgess has lived and worked in Asia, Africa and the Middle East. He has headed various schools and departments at universities, where his passion for technology has led him to design and develop blended learning programs. His educational solutions have included website design, program development, transparent testing and materials that encourage analysis and critical thought.

Peerasak Rojana-apichatsakul is a lecturer of School of Liberal Arts at Shinawatra International University, Thailand. He has a high level of expertise in teaching a wide variety of professional and academic English courses for different groups of learners, such as *Business English*, *Academic Writing in English,* and *English Technical Terms*.

Appendix 1: Academic English Proficiency Test 2012 & 2013 Intake Scores

2012 Candidates	Total Score		2013 Candidates	Total Score
1	79.3		1	84
2	75.7		2	83.5
3	64.3		3	79.5
4	62.9		4	75.5
5	62.9		5	74.5
6	62.1		6	66.5
7	60.7		7	66
8	60.0		8	65.5
9	57.1		9	65
10	53.6		10	64
11	53.6		11	63
12	51.4		12	62
13	49.3		13	62
14	45.7		14	61
15	42.1		15	59.5
16	38.6		16	59.5
17	38.6		17	59.5
18	37.1		18	59
19	37.1		19	59
20	35.7		20	54.5
21	35.7		21	52.5
22	34.3		22	52
23	32.9		23	48
24	32.1		24	47.5
25	26.4		25	44.5
26	25.7		26	43.5
27	25.7		27	43
28	22.1		28	39
29	18.6		29	37.5
30	17.1		30	36.5
31	16.4		31	34.5
32	15.7		32	34
33	15.0		33	33
34	10.7		34	32
35	10.0		35	31
			36	30.5
			37	29
			38	27
			39	26.5
			40	24.5
			41	24.5
			42	22.5
			43	21.5
			44	21
			45	21
			46	20.5
			47	18.5
			48	18.5
			49	18.5
			50	13

Appendix 2: Academic and language skills surveys

Academic / Study Skills	Reading Skills
Use a copy of an assigned textbook for this course	Read assigned chapters in the course textbook
Do students have a copy of this textbook	Read outside sources on the course topic
Locate books in the library to extend their subject knowledge	Read academic journals on the course topic
Use the library card catalogs or database to search for sources	Use a dictionary to learn the subject terminology
Find information using reference books	Read popular press or online posts to learn more on the topic
Understand and make use of different components of a textbook	Read 0 | 1-3 | 4-6 | 7-10 | >10 pages a week
Use classroom activities and events to increase learning	Read and analyze information for deep meaning
Take an active role in a group discussion in English	Read and take notes from chapters in a textbook
Use strategies for a variety of exam types	Read for use in class discussion
Prepare effectively for exams	Read to present in a seminar
Follow instructions	Read to use in an academic paper
Use appropriate techniques to avoid plagiarizing	Read to prepare for exams
	Read for interest
	Read to become familiar with the main theories in your field

Computer Skills	Writing Skills
Use word processing software to complete an academic project	Write a <3 | 3-5 | 6-10 | >10 page paper for a grade
Use spreadsheet software to reflect numerical data effectively	Write original work on assignments
Use search engines/web browsers to find academic information	Write original work on tests
Evaluate the validity of information found on the Internet	Write relevant texts that show their opinion
Use electronic mail systems appropriately	Write summaries of materials they have read
Use appropriate English terminology when talking about computers	Write analyses of the topics or issues they are learning
Format typed assignments to required academic specifications	Write comments for on-line discussions
Use information from the Internet effectively	Write reflections of what they have understood in a lesson
Manage files	Write by hand
	Type on computer
	Develop an outline before beginning a project
	Develop a thesis statement / research question / hypothesis
	Gather direct data using an instrument such as a survey
	Write a literature review
	Write an introduction / discussion / conclusion
	Present results using charts, graphs or tables

Critical Thinking Skills
Use critical thinking skills to solve problems
Evaluate a text for bias and subjectivity
Evaluate accurately the quality of their own work
Evaluate accurately the quality of their peer's work
Use logical reasoning when analysing or developing an argument
Recognize their own knowledge weaknesses

Speaking Skills
Speak as part of class discussions
Speak in small groups
Speak individually, i.e., give presentations in class
Speak to you outside class
Mimic what you have said
Ask pertinent questions to increase understanding
Speak up when they are confused or need clarification

Interpersonal Communication Skills
Work in groups
Practice empathic listening
Use effective oral argument skills
Manage interpersonal conflicts effectively
Begin to identify communication weaknesses in themselves

Listening Skills
Listen to your lectures and take notes
Listen to the words or ideas of their classmates
Listen to outside sources (video, internet)
Show that they are listening by maintaining eye contact
Show that they are listening by making comments