Connecting with International Learners by the Globalization and Localization of E-Learning Contents through Collaboration: Lessons from Higher Education Institutes in Korea

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It is reported that Korea has the highest Internet penetration rate in the World (KERIS, 2002). The number of internet users in Korea numbered 24.5 million as of October 2001, which equals 51.6% of the total population. This figure is more than double the figure of 2000, which was 11.3 million. The history of adapting education to the information age in Korea has begun from the 1970s, namely the embryonic period. Early and mid 1980s was the developing period during which the comprehensive plan for education reform was initiated. During the late 1980s and early 1990s, or what we call the expanding period, plans to reinforce computer education in schools were established, while a scheme to build a research and education network in higher education institutions was conceived. From mid 1990s to the present, education is being adapted to fit the information age. Against this backdrop, the Framework Act on the Promotion of ICT was formulated (MOE & HRD, 2001).

In the process of utilizing ICT in schools, some major problems were identified. They include a shortage of educational contents and lack of information sharing among institutions. This implies that there is a need to develop and secure ample e-learning contents through collaboration among educational institutions at a local level as well as at an international level. This paper presents the current status of e-learning in Korean higher education institutions, describing initiatives in the globalization and localization of e-contents through regional and international collaborations.

Initiatives in Globalization of E-Contents in Korean Conventional Universities

In a competitive and multicultural society, it is imperative for leading higher education institutions to reach out to global learners. Rapid development of global networks allows greater access to education and training contents worldwide. This also means that universities now have a better opportunity to connect with both local and international learners by offering e-leaning courseware. While educational contents aimed for the global learning communities need to be internationalized so that the demands of multinational learners are fulfilled, they also need to be localized so that the demands of regional learners are also covered.

International Cyber University (ICU) is the first initiative by Ewha Womans University, Korea to develop educational contents for global learners. ICU was funded by the Ministry of Information and Communication with a sum of $313,500 USD and directed by the Ministry of Education and Human Resources Development. As an international learning community, ICU provides six internet-based distance courses in Korean Studies and Women's Studies for students from multicultural backgrounds. The aims of ICU are to promote international collaboration by offering opportunities for students to share their learning and cultural experiences through accessing asynchronous online courses and to encourage educational institutions to exchange courses and materials. Students from universities worldwide that have agreements to exchange courses with Ewha are able to use ICU without additional tuition fee and to transfer the credits earned at ICU to their universities. Students from other institutions are required to pay $150 USD per each credit; that is $450 for a 3-credits course (http://icu.ewha.ac.kr).

The instructional strategies incorporated in ICU are to design courses by utilizing instructional technology techniques, to provide on-demand courses by ongoing needs analyses, and to facilitate hands-on learning experiences accommodating field trips to Korea. The support services imbedded in the curriculum are the provision of a large amount of data and information, customized guidance with online feedback from instructor, and technical support for problems throughout the course session. ICU courses are open to students both from international institutions and Ewha. The total number of international students enrolled at ICU is quite a few. In the Spring Semester, 2002, 291 students enrolled in six courses, among them are 23 international students from Japan and U.S.A. It is expected that for the coming Fall Semester, 2002, there will be more international students from multinational backgrounds, such as Australia, India in addition to Japan and U.S.A.

ICU at Ewha has just begun and is faced with several issues to grow qualitatively and quantitatively as a leading global virtual institution. The major difficulty found during one year's experience at Ewha was to find ways to motivate international students to have interest in other cultures, like Korean culture, so that they can enroll in international courses offered by ICU. It was also indicated that the curriculum needs to be more diverse to meet the various interests and needs of multicultural learners. It can be recommended that ICU at Ewha should make an effort to create a customized curriculum with international collaboration considering multicultural context in the international virtual classes.

Sejong University offers a "Global MBA" program in collaboration with Syracuse University in U.S.A. The goals of this MBA program are to provide students with opportunities for acquiring an advanced MBA degree, for becoming a bilingual

business man/woman, and for becoming a global business man/woman. In this program, Sejong University delivers the courses in English by online lectures accompanied by face-to-face guest lectures at Sejong University campus, some of them being instructors from Syracuse University (http://www2.sejong.ac.kr~seracuse/).

Also, students at Sejong have an opportunity to earn double MBA degrees from both universities when they complete the required online courses via the Internet and a 2-3 weeks study abroad program at Syracuse University. Sejong has tried to globalize its MBA program by integrating the MBA program developed by Syracuse University. In this case, Sejong has not reorganized the educational contents, but has implemented the same contents made by the international partner. This global initiative by Sejong University has to deal with the issue of contextualization of contents to suit the needs of learners who will ultimately function in the Korean business culture.

Initiatives in Globalization of Virtual Education in Korean Corporate Setting

Virtual education and training in the corporate sector in Korea has begun in the mid 1990s. The leading companies, such as Samsung and LG, established institutions, such as the Samsung Cyber University and LG Cyber Academy, respectively. LG Cyber Academy has offered about 50 online training programs to approximately 25,000 employees and will offer more than 150 programs in the near future. Meanwhile, Samsung Corporation founded Credu by restructuring the Samsung Cyber University to promote online training at the companies in Samsung Group. More than 50 % of the total employees, numbering approximately 80,000, receive their annual training in Samsung via web- based training courses (Jung, 2002).

The most popular online courses operated by corporate institutions are business management and administration programs. The educational contents of these online programs are developed in collaboration with competitive partners in the region, from other parts of the country, or the international community. Some e-MBA courses are globalized in terms of utilizing the contents developed by overseas partners. Credu offers a business management course, "Change Monster," via the Internet using contents developed in collaboration with the Boston Consulting Group (http://www.credu.com/pls/cyber/).

Korean Center for Financial Markets operates a master's degree program in Financial Markets in collaboration with Illinois Institute of Technology. In this program, students take online courses via the Internet while attending an offline short-term training course offered by IIT as an abroad study at IIT (http://www.kcfm.org/program.htm). The major

strategy of this online MBA programs is to allow learners to complete a global standard degree course at a competitive overseas university via mostly the online channel, without having to be physically present at an overseas institution for couple years. Therefore, educational contents for such an e-MBA program offered in Korea are very much the same as those developed and used in the partner business schools abroad; In this case, educational contents developed in international partners were not necessarily localized to adapt to learners from Korean culture.

However, Credu did reorganize the contents of a business strategy course, "Change Monster," developed by the Boston Consulting Group to suit the Korean business culture; That is, Credu tried to contextualize internationally produced educational contents to fit the Korean local culture. According to Credu, the localization of imported contents is very difficult in terms of cultural factors in the working environments. In creating the course on "Change Monster," Credu used only the main concept and motive formulated by the original developer due to cultural connotations integrated in the contents. Credu converted offline text to web-based contents and created almost new contents considering cultural characteristics of Korean business persons. Also, their web courses utilize edutainment elements, like animation, sound, and game to motivate learners.

The most difficult problem in localization is to understand the morals, values and emotions underlying the international education contents; Many times, theoretical approach and methodology used in the contents are not fit with the subculture of trainees. Also, there is a great difference between organization cultures between Korea and Western countries; Korean organization culture has a characteristic of a vertical culture where relationships depend on the rank and age. In contrast, the Western organization culture is more or less horizontal culture, where age is not so much a major factor in relationships as competency is. Due to the cultural difference, cases and examples used in the international contents are often replaced with those of local institutions. Therefore contents developed abroad should be contextualized based on the local culture in terms of values and emotions of target learners when they are integrated in virtual courses.

The State-of-the-Art in Korean Virtual Universities

In Korea, the ultimate goals for adapting education to the information age are to nurture creative human resources, to construct a virtual learning system, and to promote open education and lifelong learning. Main tasks for adapting universities to the information age are first, managing the Korean education network that connects higher education institutions in the nation and managing KOLIS-NET, the library network, second, constructing a system to share academic research information such

as Edunet and Riss founded by Korean Education & Research Information Service in 1999, and third, operating virtual universities (MOE & HRD, 2001). The Ministry of Education implemented a two year virtual university trial project from 1998. Following the trial project, The Ministry of Education and Human Resource Development issued licenses to nine virtual universities in 2001 and six virtual universities in 2002.

Virtual universities in Korea serve as a channel for distance education, and allow students to earn degrees equivalent to those granted by two-year junior colleges or four-year universities if they complete a set of credit hours. The merit of virtual universities is that they provide educational services free from the restrictions of time and physical location, as the Internet becomes the delivery channel. Benefiting from virtual universities, adult learners are able to acquire higher education degrees by taking courses while they continue to maintain their jobs. Virtual university is also effective as a means for retraining, as it provides new knowledge and skills through the web-based instructions. This is important in the sense that contemporary men and women need to continue learning in order to keep pace with the rapidly changing working environment (Lee, 2002; Oblinger, 2002; Ryan et al., 2000).

Ten virtual universities participated in the trial project during 1998 to 2000. There were seven consortia among ten virtual universities, which consist of 57 conventional universities and five companies. The main objectives of the virtual university trial project were as follows: 1) to build a virtual distance learning system, 2) to develop web-based educational contents for higher education, 3) to share learning and human resources among universities, 4) to create a regional collaborative system for operating virtual universities (MOE, 1998; Jung, 2001).

There are a total of 15 virtual universities operating in Korea. As the pioneer online distance education institutions, nine virtual universities opened in March 2001: Korea Cyber University (www.kcu.or.kr), Korea Digital University (www.koreadu.ac.kr), Kyunghee Cyber University (www. khcu.ac.kr), Open Cyber University (www. ocu.ac.kr), Sejong Cyber University (www. cybersejong.ac.kr), Semin Digital College (www.Kcc.ac.kr), Seoul Cyber University (www.iscu.ac.kr), Seoul Digital University (www.sdu.ac.kr), and World Cyber College (www.world.ac.kr).

For the first semester in 2001, the projected total number of student populations stands at 6,220. The average competitive rate of nine virtual universities was 1.92; the highest rate was 2.93 and the lowest rate was 1.13. The actual number of enrolled students was 5,225, which was the 83.9 percentile of the projected number of students. This enrollment ratio of the virtual universities was impressive. However, the average enrollment dropped to 76.9 percentile in the second semester of

Table 1. Status of Virtual Universities in Korea (2002)

Virtual University (Est. Year) (Home Page Address)	Departments Established	Student Quota	Establishing Body	Globalization
1. Asia Digital University (2001−) (http://www.adu.ac.kr)	Literature, Theatre-Movie, Multimedia, Management, Lifelong Education	1,000	A Non-Profit Corporation	Affiliation of Next Ed Limited, Hong Kong
2. Daegu Cyber University (2001−) (http://www.dcu.ac.kr)	Internet, IT Design, E-Management, Integrated Education	800	Daegu University Foundation	—
3. Dongseo Cyber University (2001−) (http://www.ewcu.ac.kr)	Internet, Digital Design, Social welfare, Children Studies, E-Business	400	Dongseo University Foundation	—
4. Hanyang Cyber University (2001−) (http://www.hanyangcyber.ac.kr)	E-business, Management Information, Computer, Educational Contents, Digital Design	1,000	Hanyang University Foundation	—
5. Korea Cyber University (2000−) (http://www.kcu.or.kr)	Law, Venture Business Administration, Social Welfare, Practical English, , Computer/IT, Digital Media Design, Liberal Art & Science	1,650	A Consortium of 38 Universities	—
6. Korea Digital University (2000−) (http://www.koreadu.ac.kr)	Digital Management, Digital Information, Digital Media Design, Digital Education, Culture & Art, Social Welfare, Law, Administration, Media Studies, Practical Languages, Scouts, General studies	1,800	A Consortium of 7 Universities	—
7. Kunghee Cyber University (2000−) (http://www.khcu.ac.kr)	Media Literature, Hotel and Tourism Management, E-Business, Management Information, Cyber NGO, Digital Multimedia, Fortune Management	1,600	Kunghee University Foundation	—

Virtual University (Est. Year) (Home Page Address)	Departments Established	Student Quota	Establishing Body	Globalization
8. Open Cyber University (2000—) (http://www.ocu.ac.kr)	Foreign Languages (Japanese, English, & Chinese), Management, Law, IC Technology, Digital Contents, Computer Design	1,400	A Consortium of 15 Universities	Collaboration with Univ. of Southern Queensland /INDELTA, Australia; Derby Univ., England; Ohio State Univ., USA
9. SeMin Digital College (2000—) (http://www.kcc.ac.kr)	English Translation, Hotel and Tourism Management, Digital Media	450	Kyungbuk Foreign Language Techno College	Collaboration with Liaoning Normal Univ., China; Irkutsk State Linguistic Univ., Russia
10. Sejong Cyber University (2000—) http://www.cybersejong.ac.kr	Hotel and Tourism Management, E-Business, Financial Management, Real Estate Management, Internet/ Communication Technology, Information Protection/ System Engineering, Digital Contents, Game/ Animation	1,300	Sejong University Foundation	—
11. Seoul Cyber University (2000—) (http://www.iscu.ac.kr)	Social Science, E-Commerce, IT, Education Process	1,800	A Non-Profit Corporation	Collaboration with Univ. of California, Fresno, USA
12. Seoul Digital University (2000—) (http://www.sdu.ac.kr)	Law & Police Administration, E-Business, Multimedia, Cyber Trade, General Studies, International Studies (Japanese &Chinese)	1,600	A Consortium of 37 Universities	—
13. Wonkwang Digital University (2001—) (http://www.wdu.ac.kr)	Digital Management, Game Design, Game Graphics, Game Software	700	Wonkwang University Foundation	—
14. World Cyber University (2000—) (http://www.world.ac.kr)	Theology, Social Welfare, Hotel Foods, Cyber Commercial Information, Internet Business, Cyber Education, Health Foods, Leisure Sports, Practical Music	1,300	A 2-yr Theological College	—
15. Youngjin Cyber College (2001—) (http://www.ycc.ac.kr)	International Certified Computer Programming, Business Certification Management, Computer Media, E-Business	400	Youngjin College Foundation	—
Total		**17,200**		

2001(MOE & HRD/Lee, 2001; Jung, 2001). It seems that the high rate for the first semester was somewhat due to the novelty effect.

Interestingly, there were quite big differences in the enrollment rates among the virtual universities. For the first semester, the highest rate was 96.4 percentile and the lowest rate was 50.8 percentile. For the second semester; the highest was 95.9 percentile and the lowest was 45.6 percentile. Specifically, six universities' enrollments were above the 80th percentile. In contrast, two universities' enrollments were around 50 percentile. One of the causes for this low enrollment rate might have been the nature of those universities' curriculum based on social science, theology, food, and music as compared to the other universities' curriculum that focused on computer and information technology.

According to the results of the monitoring study (MOE & HRD/Lee, 2001), only six percent of the students at virtual universities were in under 20's who were the majority in conventional universities. The majority of the students were in between 20's and 30's; 46 percentile in their 20's, 32 percentile in their 30's. Although, the majority of students belong to 20's and 30's, they were high school graduates. 75.5 percentile of the students had jobs. As students at virtual universities, they were able to upgrade their education while they were having full-time jobs.

The study found that the virtual universities with one-year experience of operation were confronted with the following problems: the lack of people's understanding on virtual learning, the decline of the enrollment rate, the difficulties in distributing software, developing instructional contents, administrating online tests, sharing resources and collaborating with other virtual universities.

In addition to nine universities, six virtual universities opened in March of 2002: Asia Digital University (www.adu.ac.kr), Wonkwang Digital University (www.wdu.ac.kr), Dongseo Cyber University (www.ewcu.ac.kr), Hanyang Cyber University (www.hanyangcyber.ac.kr), Daegue Cyber University (www.dcu.ac.kr), Youngjn Cyber College (www.ycc.ac.kr). There are a total of 15 virtual universities which are accredited internet universities operating in Korea (Jung, 2002; MOE & HRD, 2002) (see Table 1).

Out of the 15 virtual universities, 13 are four-year universities while two are two-year junior colleges. The student population at virtual universities stands at 17, 200. There are no statistics available relating to the enrollment of the virtual universities in 2002. It will be very interesting to find out the trend of the enrollment rates for the year 2002 and to compare it with those of the year 2001. The results will show the recognition of virtual institutions in Korean society as well as the strategies of the

virtual universities to increase their enrollment rates.

Eight virtual universities such as Daegu Cyber University, Dongseo Cyber University, Kyunghee Cyber University, Hanyang Cyber University, Sejoung Cyber University, Semin Digital College, Wonkwang Digital University, and Youngjin Cyber College were founded by the university foundations who previously established the conventional universities. These virtual universities have an advantage of sharing resources, such as professors, courses, digital library, and other facilities with the conventional universities belonging to the same foundations.

The virtual universities allow 9 to 21 credits to be earned in a semester and a minimum of 140 credits are required for graduation from four-year universities and 80 credits are required for graduation from two-year junior colleges. Students are allowed to earn three to six extra credits per semester when they apply for early graduation. Tuition fee for per semester is between $794 USD to $1,190 USD. Fee for one credit is between $32 USD to $79 USD. This tuition is about 1/3 to 1/2 of that of conventional universities.

Four virtual universities among the 15 were founded by a consortium of universities: Korea Cyber University is operated by a consortium of 38 universities in the nation; Korea Digital University is composed of 7 universities; Open Cyber University is operated by a consortium of 15 universities; and Seoul Digital University is composed of 37 universities. In sum, a total of 97 out of 357 conventional universities in Korea are participating in the 15 virtual universities as independently or collaboratively.

These consortium-based virtual universities acknowledge credits among members of the consortium and share their courses, resources in hardware, software and humanware for operating e-learning courses. For example, the second semester of 2002, Korea Virtual University as a consortium of 38 universities offers 67 general courses and Open Cyber University as a consortium of 15 universities offers 221 general elective courses. These internet-based courses consist of the courses offered by member universities of the consortium. In addition to sharing courses, these consortium universities have increased collaborations in terms of planning, developing and distributing educational contents which require high production cost.

The major courses offered by these universities are concentrated in computer & IT, digital media, multi media design and e-business. Next to the ICT-based courses, practical courses or certificate-related courses, such as foreign languages (Japanese, English and Chinese), hotel & tourism management and social welfare, are offered. In contrast, courses in humanities, social sciences, political science and arts are not

preferred. This shows that, Korean virtual universities function more or less as vocational education and continuing/lifelong learning institutions rather than as alternative institutions to conventional academic universities. In fact, about 80 percent of students at the virtual universities have full-time jobs (MOE/KERIS, 2001; Jung, 2002).

These virtual universities make use of emerging technologies and advanced techniques, such as satellite broadcasting, the internet, the World Wide Web, video conferencing, video/audio-on-demand, virtual reality, etc., in offering their courses to learners. Teaching methods and learning activities of these virtual universities are, in general, asynchronous/synchronous lectures and discussions, virtual studio-based lectures, web-based attendance checking, online quizzes, or project-centered learning activities in collaboration with class mates. Besides these online activities, learners are also offered offline learning resources, such as textbooks, lab facilities, and guidance.

Most virtual universities have a partnership with IT related companies in terms of sharing advanced IT facilities mostly owned by the companies and sharing courses developed by the virtual universities. Some courses have been produced by the company's support in terms of constructing web platform and producing advanced technology-based contents. For example, Korea Cyber Universities offers 9 satellite-based courses with Digital Chosun's technology support such as producing and delivering the satellite-based courses. Also, Open Cyber University has collaborations with several corporations, such as Youngsan Info Communication, Maekyung Digital Campus and Career in terms of sharing technologies and courses. Hanyang Cyber University has co-established by the joint effort of conventional Hanyang University and LG EDS. LG EDS supports network facilities and professional management of the network system for Hangyang Cyber University. Korea Digital University has several collaboration companies, like Dunet, A & S, Compaq Korea and Sorin in terms of sharing learning technologies.

Korean virtual universities have made an effort to compete with conventional universities as well as with associate virtual universities to survive or to become a leading institution. Some of the strategies initiated by the virtual universities are as follows:

1) Emphasizing flexible learning in terms of time, location, age, and physical handicaps and learning methods by integrating advanced learning technologies and diverse learning formats.
2) Offering practical and certificates-related courses to meet the demands of adult learners
3) Providing students with equivalent benefits with students of conventional

universities, such as military service postponement, student bank loan for tuition, per unit registration fee system, transfer to conventional university, early-graduation, multiple majors, internship and offline supplementary courses and hands-on experiences.

4) Specializing the curriculum by opening unique and attractive majors, like game, entertainment, e-business/commerce, cyber trade, NGO, and Scout.

5) Expanding the university e-campus quantitatively as well as qualitatively by cooperating with other education institutions. For instance, 15 virtual universities and The Korean Army joined in collaborations (2002. 5.13); More than 500 Army Officers every year will be educated through e-learning courses offered by the virtual universities.

6) Uplifting e-education system with a global standard by collaborating international virtual education institutions.

There are four virtual universities among 15 virtual universities those have somewhat concrete results in initiatives in terms of globalizing educational curriculum. Seoul Cyber University made an agreement with University of California, Fresno to exchange credits and offer a dual degree program. The specific procedures and steps are in progress (http://www.iscu.ac.kr). Asia Digital University has joined in NextEd which is a Hong Kong based systems integrator and a consortium of 19 international virtual universities in the world. With the affiliation of NextEd, Asia Digital University will offer a global dual degree in collaboration with 19 international virtual universities in the near future (http://www.adu.ac.kr). Semin Digital College has made mutual agreements with Irkutsk State Linguistic University in Russia and has set ·up sisterhood relationship with Liaoning Normal University in China (http://www.kcc.ac.kr).

Open Cyber University is the most active institution in relation to globalizing the educational curriculum. Specifically, Open Cyber University has made joint agreements with the University of Southern Queensland and INDELTA, a virtual education institute in Australia, to exchange English, IT and other programs. Furthermore, OCU has a plan to expand its globalization efforts in collaboration with Derby University in England and Ohio State University in U.S.A to offer internationalized courses in Leaning English, Business Studies and Psychology. Also, OCU plan to provide students with the credit exchange system and a dual degree program in the near future collaborating with abroad partners (http://www.ocu.ac.kr).

Although some virtual universities have advanced in operating globalized e-learning, Korean virtual universities are in their early stages. Korean virtual universities are challenged to restructure their educational goals and missions in order to meet the demands of lifelong learners in a global village.

E-learning in Korean higher education institutions are faced with some difficulties, such as lack of people's awareness on e-learning, recruiting and keeping students, developing quality e-contents, administrating validated online test and sharing resources in collaboration with other institutions (MOE & HRD/KERIS, 2001; MOE & HRD/Lee, 2001). These difficulties raise several issues to be considered in the development of virtual education institutions in Korea (Kim, 2002).

First, Due to the fact that virtual institutions are in embryonic period, support systems for virtual higher education need to be established by the government and private sectors to promote the flexible e-learning system based on ICT technologies for citizens in information age (Collis & Gommer, 2001; Sakamoto, 2002a).

Second, it is a necessary to find a strategy for enhancing peoples' understanding on e-learning (Nagaoka, 2001). The promotion of awareness on e-leaning in the long run will contribute in increasing the enrollment rate. Besides, in order to boost the enrollment rate, the current curriculum of the virtual universities should be re-structuralized to be a learner centered e-curriculum that meets the needs of prospective virtual students.

Third, it is required to evaluate virtual students with a validated testing instrument. Virtual universities should develop and utilize effective web-based tests to administer validated evaluation.

Fourth, there is an urgent need for establishing nation-wide and global collaboration systems among virtual education institutions. The collaborative efforts should be implemented in managing degrees, credits and curriculum, as well as in creating leaning contents, taking into consideration the multicultural nature of learners.

Fifth, educational services provided by in each of the virtual universities need to be specialized and differentiated against each other in terms of goal, curriculum, learners, and educational environments (Yamada et al., 2001). The current educational services offered by most universities are not sufficiently specialized, and are very much the same as conventional universities.

Sixth, teaching and learning models specific to e-learning must be developed (Gibson, 1998). That is, teaching methods, learning activities, interaction techniques between instructors and students, and evaluation methodology should all be thought of in the context of e-learning (Yoshida, 2001).

Seventh, there is a necessity for creating a global e-learning community among

administrators, instructors, and learners to promote sharing ideas and to cooperate for future global e-campus (Oblinger, 2002; Sakamoto, 2002b).

Higher education and training institutions in Korea make an effort to shift their educational paradigm to an e-learning paradigm in order to meet the needs of learners in the lifelong learning society. E-learning in Korean higher education has so far been successful in bringing into the learning community learners who have difficulties in attending conventional colleges and universities for reasons such as remoteness, age, economic status, or working conditions.

There are only of few higher education institutions that initiate e-learning curriculum with global contents in collaboration with international partners. Therefore, it will be a challenge for virtual universities and corporate training institutions to take the next step forward in joining the international learning community to reach global learners as well as to cater to local learners who wish to become global citizens beyond cultural and linguistic barriers.

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