

Multimedia and the English Grammar Abilities of University Freshmen

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The development of multimedia during the past few years offers tremendous potential for improving the English abilities of students. Instantaneous links, voice recognition, video, graphics, and digital recording are being integrated into English as a foreign language education so that perhaps the ideal can be reached where students learn the language faster and with less effort. These technologies have been applied to various aspects of English as a foreign language education, including speaking (Eskenazi, 1999; Coniam, 1999), listening (Umino, 1999; Brett, 1997), vocabulary acquisition (Cummins, 1998; Grace, 1998), and writing (Liaw, 1998; Braine, 1997).

But multimedia materials which aid Japanese learners of English grammar are definitely lacking on the market, and there has been an inadequate amount of classroom research conducted on the grammar abilities of students—research which would provide a basis for the development of high-quality multimedia English grammar-learning materials. This dearth in grammar-related research and materials exists despite the fact that grammar ability is known to be a most crucial aspect of language proficiency (Bardovi-Harlig, 1999) and that students can benefit from explicit grammar instruction (Ellis, 1998).

The goals of this paper are: 1) To give a brief review of how multimedia is aiding English grammar learning, and 2) To describe the English grammar abilities of Japanese university freshmen.

Some very important results were obtained with respect to describing the English grammar abilities of university freshmen. For example, when given a multiple choice test, freshmen have a lot of difficulty identifying both the sentence pattern *S + V (non-be verb) + C (present participle/ past participle)*, and participle constructions. On the other hand, they do quite well recognizing both the sentence pattern *It + be or seem + clause beginning with that*, and the pronoun *it* substituting for a noun phrase/ clause. These findings can provide a basis for the design and development of multimedia materials.

The Current State of Multimedia in English Grammar Education

The term “multimedia” usually refers to computer-related technologies which integrate graphics, animation, digital sound, or high-quality video.

Multimedia are powerful tools because they have the potential to make learning English grammar fun! There can be instantaneous links to various data. Grammar explanations can be viewed and reviewed at the learner’s own pace. There can be unlimited, immediate feedback pinpointed to the specific grammatical errors made by the student. A student has

privacy and is not singled out to speak in class. Materials can be designed to accommodate different learning-style preferences. A learner has control. By using computers for grammatical tutorials and drills, more classroom time can be dedicated to using the grammatical structures appropriately in real communication. Or, boring grammar classes can even be eliminated! Instead, students can learn grammar via computers.

So, a paramount responsibility of multimedia English materials designers is to create grammar-learning materials which are based on established and successful pedagogical principles. It seems clear, for example, that the acquisition of new knowledge results from social interaction with similar and more capable peers (Vygotsky, 1978). Also, Krashen's (1985) Input Hypothesis says that learning occurs when attention is focused on meaningful language. Accordingly, VanPatten (1993) claims that grammar learning occurs when a task focuses the student's attention on the meaning of the grammatical item in relation to its surrounding sentence.

Good multimedia materials for learning English grammar have a number of characteristics (Bader, 2000; Grace, 1998; Murray & Barnes, 1998; Soo, 1998; Tergan, 1997; Watts, 1997). The materials meet the linguistic and social needs of students. They give Japanese support to lower-level (i.e., most) students. Good materials for learning grammar are user-friendly and have clear explanations. They are at an appropriate level of difficulty. They provide a wide-range of pedagogically-sound tasks. Good materials have interesting graphics. They move at a good pace. They allow the user the ability to begin the program at different points. They include authentic documents from sources such as magazines and advertisements. There is learner assessment, feedback, and progress-charting.

Collentine (1998) recommends a few more ideas very specific to grammar learning. He says the target grammar item should be "physically salient," in a different font or having a unique sound. He also claims that eliminating redundant structures, at times, enables students to focus their attention on the item being taught. For instance, when teaching the past tense, learners can be asked to determine the time frame in the sentence *John called Mary*, without a lexical redundancy such as the word *yesterday* so that they can focus on the *-ed*. Collentine recommends using materials created with Macromedia's Director Studio to match sentences with pictures.

Leow (1995) claims that audio input is highly effective because learners tend to notice unexpected sounds (novel inflections) at the end of familiar verbs. Garza (1996) argues for the value of pictures, animations, or digital video to accompany grammatical text, and for colorizing target structures so they stand out from other text.

Below, let's look at some ways in which multimedia—especially in the forms of Internet materials and computer software—can mesh with the above principles.

Internet-based tasks provide great potential for improving students' grammar abilities because students have opportunities to interact with proficient speakers. For example, students can publish their writings on homepages. The socio-cognitive interchanges with peers or teachers which lead to the final published product, and the incentive to make a

product which will probably be seen by others, theoretically facilitates the acquisition of new knowledge about English grammatical structures.

Some of the best Internet sites for learning English grammar are listed at: <http://home.hiroshima-u.ac.jp/flare/EnglishStudySite.html> These include sites set up by ESL Partyland, BBC World Service, and the Internet TESL Journal.

Computer software, meanwhile, provides another multimedia option. Nutta (1998) compared college ESL students receiving computer-based grammar instruction with others receiving teacher-directed grammar instruction. The computer-based students used ELLIS Middle Mastery (CALI, 1996) and ELLIS Senior Mastery (CALI, 1996). This software contains audio, video, recording capability, clear grammar explanations, and practice activities. The target structures were past tense and subjunctive mood (i.e., conditional *If*). The computer-based students scored significantly higher on open-ended tests (example question: *If I didn't have to study to get good grades, _____*.) than the teacher-directed students. But there were no significant differences on multiple choice or fill-in-the-blank tests.

Yoshii & Milne (1998) have developed a software program which they claim helps Japanese students master the English articles, *a* and *the*. Called DaRT, it utilizes diagrams and communicative contexts. There are numerous exercises. If a student answers incorrectly, a hint is given and the student has at least one more chance. When one exercise is finished, the following exercise is determined by performance on that previous exercise. The system does not have a fixed set of pre-established sentences; it creates new sentences by recombining words in its dictionary. The software is not on the market, but it is described in such detail in the published article that it can be relatively-easily recreated by a teacher.

Speech recognition software allows students to "talk to the computer," and the computer responds in some way. With respect to grammar learning, Dynamic English International (DynEd, 1997), for example, has words in a mixed-up order, and the student has to say them in the correct order. It is relatively fun and reflects sound pedagogy. But Wachowicz & Scott (1999) found that it sometimes falsely accepts incorrect spoken input and rejects correct spoken input.

Lauer (2001) surveyed the opinions of 39 Hiroshima University students with respect to 32 pieces of English education software. A number of these software—at least partly—explicitly teach grammar. Among the most popular of these latter software were Quick English v 2.5 日常会話 (INS, 1996), TOEIC 実践模擬テスト (ALC, 1996), CD-ROM 版 TOEIC テストスーパー模試600問 (ALC, 1998), TOEIC 入門らくらくパック (Ask Kodansha, 1996), and CD-ROM で学ぶ TOEFL 英文法 (ASCII, 1996).

Electronic text corpora provide another exciting multimedia tool which can be used in grammar learning (Cobb, 1997). These are lists of words accompanied by examples which have appeared in both written and spoken discourse. Teachers and high-level students can learn the frequency with which particular grammatical structures occur, and in which registers they occur. For example, the British National Corpus is a 100 million -word corpus of British English available on Internet for a fee. Cobuild English Collocations on CD-ROM

(1995) contains 10,000 headwords and 2.6 million authentic examples.

The English Grammar Ability of Students

A “natural order of acquisition” for English grammatical morphemes has long been postulated (Dulay & Burt, 1973, 1974; Baily, Madden & Krashen, 1974), and numerous second language acquisition studies have supported this theory (Larsen-Freeman, 1975; Fathman, 1975; Krashen et. al., 1976; Pica, 1983, Rosado, 1986). The first (easiest?) structures learned seem to be *-ing*, plural *-s*, and copula, followed by auxiliaries and irregular past, with the latest structures acquired (most difficult?) being 3rd person singular *-s*, regular past, and possessive *-s*.

What brings about this natural order? It is now thought that five factors account for a large part of the total variance found in the order (Goldschneider & DeKeyser, 2001). If it is easy to hear or perceive a given structure (e.g., word-final morphemes, stressed syllables), it will tend to be quickly learned. Forms with few meanings are often learned before semantically complex forms (e.g., plural *-s* only expresses number, while third person singular *-s* expresses person, number, and present tense). Morphologically regular structures (e.g., *kicked*) tend to be learned before irregular ones (e.g., *sang*). Syntactic category seems to influence the natural order (e.g., lexical items appear to be acquired before functional ones, and free morphemes (i.e., individual words) are acquired before bound morphemes such as *un-* or *-ish*). Finally, if a structure appears in input with great frequency, it seems to be acquired quicker.

The development of verb tenses in Japanese learners of English generally mirrors that of native-speaking English children. A longitudinal study found that Japanese university students in the U.S. can generally produce simple past tense before they can produce present perfect tense, and that perfect progressive emerges even later (Bardovi-Harlig, 2001). The most common adverbials used with present perfect tense are *for* and *since*. A typical error involves students using present perfect when simple past should be used. The more formal instruction a person receives, the more that person can correctly produce present perfect tense. All of these phenomena are similar in first-language learners.

Of course, transfer from one’s first language also plays a role. With respect to verbs, for instance, Kawaguchi (2000) found that Japanese college sophomores sometimes used present tense even though past tense was appropriate when writing essays. One of the factors that caused this error was the influence of the historical present in Japanese narratives, said Kawaguchi. For example, one student incorrectly wrote: “He was at the death’s door and drew a map that *indicates* where he buried the treasure”; in Japanese this would be “Kare wa shi no magiwa de, dokoni takara o umetaka o *shimesu* chizu o kaita.” Students should be taught the English rule of “tense harmony.”

Takahashi (1996) found that Japanese learners of English favor monoclausal request formulas (e.g., *Would you, Could you*), whereas native English speakers prefer biclausal ones (e.g., *Would it be possible for you to, or I was wondering if you could*). But of course, linguistic complexity undoubtedly also plays a key role in this difference.

The use/non-use of the grammatical articles *a* and *the* creates notorious problems for Japanese learners of English, and provide an even clearer example of first language interference since Japanese does not have such articles. Asano (1996a, 1996b), for example, gave large numbers of junior college freshmen fill-in-the-blank tests. No pattern was found as to whether *the* or *a* was easier to use. But, in general, freshmen had the most problems with idiomatic expressions (e.g., "At that hotel you can rent rooms by the week") and with putting no article before abstract nouns (e.g., "Sadness filled the room when..."). On the other hand, students generally scored well filling in the article *a* before a noun when that noun appeared for the first time (e.g., "I am looking for *a* boy. His name is Kenichi"). They also did well with *the* in comparatives (e.g., "one of *the* oldest"), and when a noun appeared for the second time.

Whether the noun is countable or not provides a clue to the type of article needed. Takahashi (2000) found that college students of various ages could select faster and more accurately whether an indefinite article was needed or nothing was needed when the noun was countable (e.g., *book*) than when it was uncountable (e.g., *food*). The students had a lot of trouble with articles when nouns were abstract or not clearly countable (e.g., *chicken*, *iron*).

A final infamous area in which first language transfer has been observed comes in the area of typology. Japanese is basically a topic-prominent language, whereas English is a subject-prominent language. Consequently, low-level Japanese college freshmen have been found to use the dummy subjects *there* and *it* incorrectly or with less frequency, and to have problems with subject-verb agreement (Inoi, 1998; Shiori, 1991; Sasaki, 1990).

Still, linguistic universals seem to exist. Even with English articles, Thomas (1989) found that native-Japanese speakers show errors similar to those made by native English-speaking children. Both groups of people use nouns without an article more than 20% of the time even though articles are required in standard English.

Nonlinguistic factors, including knowledge of the physical world, also seem to influence how people use grammar. For example, in the area of countable and noncountable nouns, Akiyama and Williams (1996) found that Japanese college students identify *a tablespoon of apple* as being grammatically correct even though they have been taught traditional expressions such as *a bag of apples*. Here, students are selecting the singular noun form when a small container is paired with a large food item because they imagine that *apples* could not physically fit in a teaspoon. Interestingly, this study found that native English speakers do the same thing! Thus, *a tablespoon of apple* is grammatically correct.

Culture, of course, has some effect on language, too, particularly in the realm of vocabulary usage and rhetoric. Freeman & Fujita (1995), for example, found that Japanese university freshmen and sophomores "are more sentimental in their expressions" than their American counterparts (p.9). The latter group tends to use facts to describe their thoughts. To cite one piece of evidence, when asked to write in their native language a one-line sentence involving the word *parents*, one Japanese wrote *I should be grateful for my parents because they send me to college*, while one American wrote *Being a parent is a big responsibility*. A lot of

other data in this study was similar. "This shows that American people, unlike Japanese people, tend to put more stress upon logic and reason and less upon heart, emotions and aesthetics in their communication" (p.9). Vocabulary usage should be key parts of grammar instruction (Conrad, 2000).

Finally, it should be noted that grammars of spoken English differ, to some extent, from those of written English (Leech, 2000). Speech shows tendencies toward simplicity, including ellipsis (e.g., *Doesn't matter* or *You want a double?*) and less sentence subordination. Speech includes restarts and repetitions. Personal pronouns, questions, and imperatives are more common in speech. Speech has less precision in meaning, with terms such as *kind of* and *that sort of thing*. It contains peripheral adverbials (e.g., *actually, anyway*) discourse markers (e.g., *well, you know*), attention signals (e.g., *hey*), response forms (e.g., *yeah*), and greetings (e.g., *hi, bye*). Conversational grammar has an affective content (e.g., *Sorry, Would you..., Thanks*). Hughes & McCarthy (1998) remind us that discourse grammar should be a key component in any grammar syllabus.

Understanding our students' developing English grammars is especially important in the teaching of writing, because grammar ability is known to highly correlate with writing ability (Pike, 1976). Itagai & MacManus (1998) found that Japanese college freshmen and sophomores are able to correct about 5% of errors without teacher feedback, and about 45% of errors when the teacher underlines mistakes. On a picture-describing writing task, the most common grammar-related errors involved—in order of decreasing frequency—articles, missing words (e.g., *The cow is looking (at) the frog*), and verb tenses. Given feedback, students were able to correct these types of errors with roughly equal degrees of proficiency.

But amazingly, Truscott (1996), in a review of the literature, concludes that grammar correction in L2 writing classes—in any form and at all levels of proficiency—is almost always ineffective and has mostly harmful effects on students! This goes against the basic intuitions of a lot of teachers. The main theoretical argument against correcting grammatical errors is that the acquisition of a grammatical structure is part of a natural, not-yet-understood process which cannot be affected by a teacher or a peer. Truscott cites a lot of applied linguistics evidence for this claim, including, for example, Seliger's (1979) finding that Japanese students may consciously know the rule about using *a* and *an*, but fail to use it correctly. Truscott concludes that writing teachers can do almost anything else in class, but not grammar correction. "The conclusion is clear: Grammar correction should be abandoned" (p.360).

But Sato (1997) recommends that grammar instruction be a part of communicative language teaching.

What method of teaching grammar is best? Shiokawa & Yoffe (1995) compared the effectiveness of two teaching methods in Japanese high school English writing classes: a traditional grammar-translation method with the emphasis on accuracy, and a discussion-based approach to writing with a focus on creative production and oral communication in class. The discussion-based class outperformed the traditional class on a grammar-translation task

administered at the end of the school year. This study has numerous methodological limitations, but when students can personally relate to the material they are studying, or attention is on fluency rather than accuracy, it is thought that they often retain more (Krashen, 1985; Stevick, 1976).

Similarly, Storch (1999) found that, overall, college students learn English grammar better when they do pair-work tasks than when they work individually. Tanaka (2001) found that listening-based grammar activities and speaking-based grammar activities seem to complement each other, helping college students improve their English abilities.

To teach students the subjunctive mood (i.e., *if* sentences), Nagai (2001) recommends a technique which has the following features: a) the term "subjunctive" (*kateiho* in Japanese) is never used in class, b) structurally, the indicative mood (e.g., *If I have money...*) is repeatedly compared with the subjunctive mood (e.g., *If I had money...*), c) emphasis is put on the speaker's mental attitude in each type, d) students can orally practice the different types. Nagai used this technique in a freshman college class, compared its effectiveness with a "traditional technique" used in another class, and found that the newer technique worked significantly better.

With respect to testing, Ito (1997) found that a grammaticality judgment test (i.e., put a circle next to the sentences which are grammatically correct) had more reliability than cloze or sentence-combining tests when used with Japanese high school students.

Takagi (2000) found that high school students who had strong motivation for both exams and communication had a more positive attitude toward grammar learning than those who were only concerned with exams. This study also found that most students think that grammar lessons, as currently taught, are very boring; students wish that instructors would use more imaginative and enjoyable techniques to teach grammar.

The Present Study

To measure the grammar abilities of students, 130 freshmen from four Hiroshima University faculties—Education, Engineering, Science, and Biology—were tested using the *English Qualification Test for Japanese University Students* (Tanaka & Lauer, 1998). This 60-item multiple-choice grammar test comes in two parallel forms: Form A and Form B. Eighty-five students took Form A, and the remaining 45 students took Form B. Thus, for example, item 6 on Form A involves the same grammatical construction as item 6 on Form B, with only the surrounding content words being different.

Each form tests for students' abilities to correctly recognize eight sentence patterns and eight grammatical items. These 16 grammatical constructions are what the Japanese Ministry of Education says students are supposed to have mastered by the time they graduate from high school (Ministry of Education, 1999). For a listing of these constructions, see Tables 1 and 2. For more details concerning this test, see Tanaka (2000). Both forms of the test can be inspected in their entirety at <http://www.media.hiroshima-u.ac.jp/index.html>

Eighty-five males and 45 females took the exam. Fifty-one students were from the

Faculty of Education, 34 were from the Faculty of Biology, 23 were from the Faculty of Science, and 22 represented the Faculty of Engineering. Students were given from 45-50 minutes to complete the test, and it was found that almost all of them could do it easily in this time. (The few students who did not finish were told to leave the remaining items blank.) Students were told that the test would measure their grammatical strengths and weaknesses, and would not affect their course grades. After the answers had been checked, students were given helpful feedback in the form of a chart which explained, in Japanese, why each question had a certain answer. They were allowed to bring the materials home for further study.

TABLE 1: Sentence Patterns Number of Question Items
on Each Form

1) S + V (non <i>be</i> -verb) + C (present participle/ past participle) Example: <i>John finished third. He seems () with the result.</i> (a) <i>to satisfy</i> (b) <i>satisfying</i> (c) <i>satisfied</i> (d) <i>being satisfied</i>	5
2) S + V (<i>be</i> verb) + C (<i>what/that/if/whether</i> clause) Example: <i>She is not () she used to be. She has changed somehow.</i> (a) <i>that</i> (b) <i>whether</i> (c) <i>if</i> (d) <i>what</i>	3
3) S + V + O (<i>if/ whether</i> clause) Example: <i>I heard Lissa married George. I wonder () she is happy.</i> (a) <i>if</i> (b) <i>what</i> (c) <i>though</i> (d) <i>provided</i>	2
4) S + V + IO + DO (<i>what/ that/ if/ whether</i> clause) Example: <i>I asked her () she believed in God.</i> (a) <i>whether</i> (b) <i>what</i> (c) <i>while</i> (d) <i>that</i>	3
5) S + V + O + C (present participle/ past participle/ root infinitive) Example: <i>Oh! I can feel something () up my leg! Get it off!</i> (a) <i>to crawl</i> (b) <i>crawling</i> (c) <i>crawled</i> (d) <i>crawls</i>	5
6) <i>It + be, etc.</i> + clause beginning with <i>that, etc.</i> Example: <i>Is it true () many people are homeless after the flood?</i> (a) <i>what</i> (b) <i>when</i> (c) <i>whether</i> (d) <i>that</i>	2
7) S + <i>seem, etc.</i> + infinitive Example: <i>Cathy pretended () me as she passed me in the street.</i> (a) <i>see to not</i> (b) <i>seeing not</i> (c) <i>to see not</i> (d) <i>not to see</i>	2
8) <i>It + seem, etc.</i> + clause beginning with <i>that</i> Example: <i>I'm glad. It appears () he followed my advice.</i> (a) <i>if</i> (b) <i>that</i> (c) <i>what</i> (d) <i>how</i>	2

Number of Question Items
on Each Form

TABLE 2: Grammatical Items

1) Infinitive (adverbial use)	4
Example: <i>Cricket's not terribly interesting ().</i>	
(a) <i>watching</i> (b) <i>to watch</i> (c) <i>to be watching</i> (d) <i>watch</i>	
2) Relative pronouns	5
Example: <i>The strike at the car factory, () lasted ten days, is over.</i>	
(a) <i>which</i> (b) <i>of which</i> (c) <i>at which</i> (d) <i>where</i>	
3) Relative adverbs	6
Example: <i>Use e-mail to contact me () you have a problem.</i>	
(a) <i>however</i> (b) <i>whenever</i> (c) <i>whoever</i> (d) <i>whomever</i>	
4) Pronoun "it" substituting for a noun phrase/ clause	5
Example: <i>() doesn't matter how you do it. Just do it as you like.</i>	
(a) <i>I</i> (b) <i>It</i> (c) <i>What</i> (d) <i>One</i>	
5) Tenses (present perfect progressive/ past perfect/ past perfect progressive/ future progressive/ future perfect)	6
Example: <i>By the time she arrived, I () for three hours.</i>	
(a) <i>had been waiting</i> (b) <i>have waited</i> (c) <i>was waited</i> (d) <i>am waiting</i>	
6) Passive voice (future tense)	2
Example: <i>Potatoes () in order to help solve the hunger problem.</i>	
(a) <i>to grow</i> (b) <i>growing</i> (c) <i>will be grown</i> (d) <i>having grown</i>	
7) Subjunctive mood (basic use)	4
Example: <i>() she richer, she'd have a better life.</i>	
(a) <i>Is</i> (b) <i>Are</i> (c) <i>Be</i> (d) <i>Were</i>	
8) Participle constructions (basic use)	4
Example: <i>() even by his teachers, Jim dropped out of school.</i>	
(a) <i>Insulting</i> (b) <i>Insults</i> (c) <i>Insulted</i> (d) <i>Be insulting</i>	

Results and Discussion

Overall, students scored an average of 47.7 correct on the 60-item test, an 80% success rate. With respect to sex, females, on average, scored better than males, but not significantly ($p < .05$). This phenomenon echoed the findings of listening and reading tests taken by freshmen (Lauer, 1999, 2000). Students in the Faculty of Education scored highest, on average, followed by engineering majors. Science and biology students scored lower. These rankings are also similar, but not identical, to the rankings on those same listening and reading tests. For the grammar test details, see Table 3.

TABLE 3: Mean Test Scores by Form, Sex, and Faculty
(Maximum Possible Score = 60)

Form A: 48.6	(SD = 7.6)	Faculty:	
Form B: 46.1	(SD = 6.6)	Education =	52.1 (SD = 5.1)
Average Total: 47.7	(SD = 7.3)	Engineering =	48.9 (SD = 4.2)
Females: 49.7	(SD = 7.3)	Science =	43.5 (SD = 7.5)
Males: 46.7	(SD = 7.2)	Biology =	43.3 (SD = 7.7)

With respect to sentence patterns (see Table 1 above), students scored remarkably well—between 85% and 88% on average—on:

- *It + seem*, etc. + clause beginning with *that*
- *It + be*, etc. + clause beginning with *that*, etc.
- S + V + O (*if/ whether* clause)
- S + V + IO + DO (*what/ that/ if/ whether* clause)

Students averaged 78% correct with the sentence pattern S + V (be verb) + C (*what/that/if/whether* clause). They averaged 68% and 67% correct, respectively, with the patterns S + *seem*, etc. + infinitive, and S + V + O + C (present participle/ past participle/ root infinitive).

Students had the most problems, averaging just 59% correct, with the following sentence pattern: S + V (non *be*-verb) + C (present participle/ past participle). Examining this in detail, students seemed to have particular problems with the expressions *seemed upset* (only 11% correct!) and *seems satisfied* (31% correct). A remarkable 69% of students thought that the utterance *Anne seemed to upset this morning* was correct. About 20% chose *seemed upsetting* in that sentence. In the sentence *He seems satisfied with the result*, 36% of all students chose *seems to satisfy*, while 33% chose *seems being satisfied*. Only 20% of students could correctly identify the participle in the sentence *Where did you become acquainted with him?*; 40% thought the correct verb phrase was *become to acquaint*, and 27% thought it was *become acquainting*. Also, only 47% of students correctly identified the participle in the construction *Do you feel tired?*; 31% thought the correct pattern was *Do you feel tiring*, while 20% thought it was *Do you feel being tired?* Similarly, students made mistakes with *The child looked neglected* (56% correct) and *The ball went flying* (64% correct); the most popular incorrect alternatives were *neglecting* (22%) and *to fly* (16%), respectively. In summary, difficult vocabulary items (*upset*, *neglect*) accounted for part, but not all, of the problem, and students incorrectly chose both infinitive and *-ing* constructions.

Yet, even within this difficult S + V (non *be*-verb) + C (present participle/ past participle) pattern, students did well with certain verbs. For example, an amazing 96% of students could correctly identify the phrase *We kept standing*, and 81% identified *The dogs kept barking*. Also, 89% of students correctly identified *We sat telling stories*.

With respect to grammatical items (see Table 2 above), students did very well—scoring between 85% and 91% average—on the following structures:

- Pronoun “it” substituting for a noun phrase/ clause
- Subjunctive mood (basic use)
- Infinitive (adverbial use)
- Relative pronouns
- Relative adverbs

It is especially noteworthy that students did well with *If* sentences (a part of subjunctive mood). Their abilities to recognize these constructions must be high thanks to training received in high school.

Students had less success with tenses (present perfect progressive/ past perfect/ past perfect progressive/ future progressive/ future perfect), and passive voice (future tense), scoring an average of 78% correct on both structures.

The most difficult grammatical item was participle constructions (basic use), where students averaged just 66% correct overall. Only 34% correctly identified the participle in *Her work done, Jill sat down...*, with an amazing 58% of students choosing the incorrect term *having done*. Just 42% correctly identified the participle in *It rained for two weeks on end, completely ruining our holiday*, with 53% of the students supplying the incorrect term *ruined*. However, even within this participle construction category, students had some successes. For example, they scored 80% or higher on the following sentences: *Deeply moved by the love story, most people...*; *Insulted even by his teachers, Jim dropped out of school*; *Having finished my homework, I went...*; and *Having solved the first problem, I began...* In summary, students seem to be knowledgeable of the construction *Having -ed*. But they need to be taught that a dependent clause containing an *-ing* participle can appear in the latter half of a sentence.

A key limitation to this study is that it only tested the receptive (reading/recognition) abilities of students. For example, most students were able to choose (among four choices) the correct verb form in the sentence “He’d get better grades in school if he *didn’t watch* so much TV.” It would be interesting to see how well they could produce these constructions, or understand them on a listening test.

Conclusion

This study has determined that most freshmen, with an accuracy rate of 85% or higher, can identify the grammatical constructions S + V + O (*if/ whether* clause); S + V + IO + DO (*what/ that/ if/ whether* clause); *it + be, seem, etc.* + clause beginning with *that*; infinitive (adverbial use); relative pronouns; relative adverbs; pronoun *it* substituting for a noun phrase/clause; and subjunctive mood.

If freshmen learn the following two rules, their grammar abilities will improve considerably:

- The sentence pattern S + V (non *be*-verb) + C (present participle/ past participle), often involves verbs such as *seem, become, feel, and look*, and these verbs are often

followed by a past participle. Thus, we have example sentences such as *He seems satisfied with the result* and *Do you feel tired?*

- A dependent clause containing an *-ing* participle can appear in the latter half of a sentence. Thus: *It rained for two weeks on end, completely ruining our holiday.*

Multimedia offer promising tools by which Japanese college freshmen can improve their English grammar skills. The best multimedia materials, in the end, will be those which are designed by teachers to meet the needs of their particular students. If those materials are based on sound pedagogical principles, and are made with a clear understanding of the grammar abilities of the students, then they will be effective materials, indeed.

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要 約

大学一年生の英語文法能力とマルチメディア

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近年のマルチメディアの発展は学生の英語文法能力の向上にとって非常に大きな可能性を提供している。レスポンスの早いインターネット上のリンク、音声認識、ビデオ、画像、デジタル録音などの技術は英語教育に統合されつつあり、学生がより早く、より少ない努力で学習するという理想に到達することも夢ではないかもしれない。こうした技術は、スピーキング (Eskenazi, 1999; Coniam, 1999), リスニング (Umino, 1999; Brett, 1997), 語彙獲得 (Cummins, 1998; Grace, 1998) そしてライティング (Liaw, 1998; Braine, 1997) などの英語教育の様々な分野に応用されつつある。

しかし、日本人の英語文法の学習を助けるようなマルチメディア教材は市場において決定的に不足している。また、高品質なマルチメディア英語文法学習教材の開発のための基礎として役立つと思われるが、学生の文法能力の教室における調査の量も十分とは言いがたい。文法の能力が言語の習熟にとってもっとも決定的な観点である (Bardovi-Harlig, 1999) という点、また文法についての明示的な指導が学生にとって役立つ (Ellis, 1998) ことが知られているにも関わらず、文法に関連した調査と教材の不足は現として存在しているのである。

本研究の目的は、1) マルチメディアが英語文法学習の現状にどのように貢献しているかを改めて調査すること、および2) 日本人大学一年生の英語文法能力を記述することの2つである。

大学一年生の英語文法能力に関しては、いくつかの重要な結果が得られた。たとえば、マルチプルチョイステストの際に、学生は、主語+動詞 (be 動詞以外) +補語 (現在分詞・過去分詞) や分詞構文の同定が苦手である。それに対し、It + be/seem + that で始まる節、および名詞句や名詞節の代用として使われる代名詞のitなどの文法構造はかなりよく認識している。これらの発見はマルチメディア教材の設計と開発の際の基礎として役立つものとなろう。