The Pedagogical Benefits of CRS use in Small-Group and Culturally-specific Settings: A Pilot use and Study of Student Perceptions

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ABSTRACT

Electronic classroom response systems (or CRS) are tools used to engage students in material; promote discussion; and offer teachers an immediate way to measure lesson and learning effectiveness. Their benefits are well understood for large class sizes and lectures. However, we have been interested to study how they might perform in small classroom settings and to assist educators and students to overcome social and pedagogical constraints peculiar to Japan and ESL contexts. It's mainly been our wish to find ways to circumvent a certain reticence on the part of students to participate more dynamically in classroom discussions and to offer feedback as to their comprehension of concepts. In this paper we begin by describing the general rationales for using CRS and some description of practices employed. This includes some anecdotal reflections. We then describe our very simple (and small sample size) survey results on student perceptions of the system(s). This generally revealed CRS to be positively viewed on self-assessment of performance and engagement; and as a continuous assessment tool (and welcome alternative to traditional mid-term and final exam formulae). Lastly, the authors discuss CRS juxtaposed with traditional and new constraints in teaching and urge educators to reckon with the cognitive and wider culturally affected and adapted attributes of today's students.

Keywords: *Computer-supported collaborative learning, education support, Clicker, enhancing teaching and learning*

Introduction

Classroom response systems (CRS), also referred to as "audience response systems," or "clickers," have become increasingly popular in American Universities (Bruff, 2009; Hoekstra, 2008), and also more recently in Asia (Atkinson, McBeath, Soong, & Cheers, 2007). On first glance, these systems appear 'high-tech,' but they are relatively simple in components, easy to

use, and relatively inexpensive to buy. In terms of fixtures, they tend to complement existing classroom facilities, such as a projector and a teacher's in-class computer, rather than requiring any new or elaborate wiring or infrastructure.

A typical CRS includes a teacher base station (with a small antenna and USB port/connector) and each student is equipped with a wireless handheld device similar to a television remote control (but more basic in fact). The systems' components communicate by radio frequency and each handheld device is pre-registered and recognized by serial number/bar code to a student (who is identified as using that remote, each time, and is designated to it by student name or student ID number).

In large courses (with enrollment over 100, for example), the commercial distributors of these systems usually provide the professor with a base station and several spare remotes free of charge. This package includes the modest software required for organizing and collecting student polling data and for producing graded (cumulative session-by-session) performance reports and output. The polling sessions are generally conducted over or upon simple Power Point slide presentations of questions. Multiple-choice is usually the preferred method for these prompt items or questions and their 'sessions' - though second generation clicker devices do offer the opportunity for students to respond by giving short, text-based, responses as an alternative.

CRS practicalities, use-viability, and cultural placement

In the United States, and in the larger colleges, it's common for virtually all students to own their 'clicker' control device (purchased during their first year and costing in the region around

30-50 US dollars per unit). And these devices are routinely sold in college bookstores, often bundled with a prescribed textbook. It is now certainly the case that the vast majority of American students today will have used, or will now be likely to use CRS at some point during their college careers. Students may use their devices for different courses, and if the entire equipment set is controlled and/or owned by the instructor, then devices can also be shared between sections of the same small-enrollment course. This is how it occurs at our own institution where the devices are simply handed out each day of class when 'clickers' are scheduled or have been decided to be used.

In short, CRS are ubiquitous (in some parts of the world); they're flexible; simple to use, and part of a simple set-up. And they are affordable.

There is also at this time a growing body of research that has critically investigated the use of these systems (e.g., Sprague & Dahl, 2009; Lucas, 2009; Duncan, 2006). This literature provides useful insight into their effectiveness (or less-effective use) for certain populations and contexts, certain new ideas for employment, and information about how various constraints concerning implementation have been handled elsewhere.

One practical and economical question for us, for example (should we wish to making CRS more of a feature at our institution), is whether to provide all incoming students with a device, or to place the burden on the student him or herself to become equipped as a matter of course. If the faculty, however, are unfamiliar with the systems, or resistant to the perceived learning curve regarding the technology, or simply prefer their own techniques, then CRS course offerings will be few. Then it may be sensible to avoid blanket expenditure in either direction (by the institution or by the student intake).

CRS, class sizes, and methods of polling options

Miyazaki International College (MIC) has a policy limiting class-sizes to 25 students. We believe that, with small classes, professors and students not only get to know each other better, but these modest class sizes have the potential to foster conditions that are conducive to student-centered education, active learning, and the development of a critical thinking. These are elements that are integral to the stated institutional missions and our particular approach to pedagogy.

So we wondered how such an educational tool, albeit one with known use-value in other cultural contexts and larger class sizes (see Mayer et al, 2009) - could be applied to smaller groups, here in southern Kyushu, Japan, and aligned with these teaching and learning objectives.

An immediate impression was that there is considerable flexibility inherent to these systems. For example, teachers may instantiate a question for responding immediately after a piece of lecture material or a demonstration has taken place – this in order to ascertain how well the teacher has communicated the concepts or argument; and/or, at the same time, how well the class has understood the material (with each proposition here, largely following the other, or being interchangeable, of course).

Post-polling bar chart information is made instantly available and projected overhead. This offers visual feedback (for all), a pause for further teaching or explanation, and (quite often) a few moments for (moderately stunned or quietly satisfied) critical engagement among

the students themselves – as they not only get a chance to see the right answer but also witness the break-down of the class per answer available (usually an A through E of options).

Figure 1 – Prof. Hamilton during a CRS session

Alternatively, as a method for incorporating clicker, it is an option to pose perhaps 3-5 questions at the end of each and every class (and for this regimen to be understood and pre-advised in the syllabus). Again, with this practice, both students and teacher(s) are able to gain immediate information not merely towards the correctness or non-correctness of responses, but also towards arriving at some explanation as to why a given response may have been correct or otherwise (or indeed why so many or so few students seemed to opt for one choice or another, viewable in blocks on the bar chart). Similarly, follow-up explanations can be then given by the teacher or offered-up by one or several of the students who may have opted correctly (and who are willing to share their logic or basis for making their responses among choices available).

Perhaps one specific benefit to this method choice is that it allows for more uninterrupted or less truncated lessons and lectures. To some degree it also induces students to take notes and devote their attention to the types of things that may be quizzed for at the end of the period. However, the instructor's decision to adopt this might be influenced by the particular teaching subject matter involved (for example, technology and artificial intelligence, or abnormal psychology, or chemistry and sciences), as these may lend themselves better to one type of CRS incorporation or another. Moreover, with longer classes it is not only that 'clicker' might offer useful enlivening changes in tempo that can help sustain students' attention and engagement, the strategic placement of questions – and perhaps hybrid placement approaches – can contribute in gaining retention of the more important class material, themes and concepts.

Yet another method, and our most commonly employed here, is to designate an entire period for clicker questions (usually 8-10 questions, every 4th class or so) and using the opportunity to teach and coach pre-polling while doing it – generally by defining concepts in question slides, reminding students about arguments and theories from previous class notes and allowing them to think about and consult texts. This is truly a hybridized method, though in another fashion. Not quite a test and not quite a lesson either, these sessions do proffer sustained attention for a whole class period as the prompts appear sequentially (and students accrue grade points, and want to do well). They also cap off course modules to some degree, and they simply give us all a break from the normal class routines. In fact, we also change room location to do these sessions, just as a matter of choice and convenience (we go to where a instructor's laptop terminal happens to be already installed; the excursion adds just a little formality and change).

On several later occasions, in the more advanced weeks of courses, we chose to remove any nominal teaching and coaching over clicker questions (as sessions were happening). And for these special clicker sessions the overall emphasis (at instructor side) was placed upon students' **reading and understanding of ideas and arguments from within quite difficult texts** (for example, on the subject of the psychological benefits of adult human play). For this, the formula for quiz taking was altered significantly (with some interesting effect).

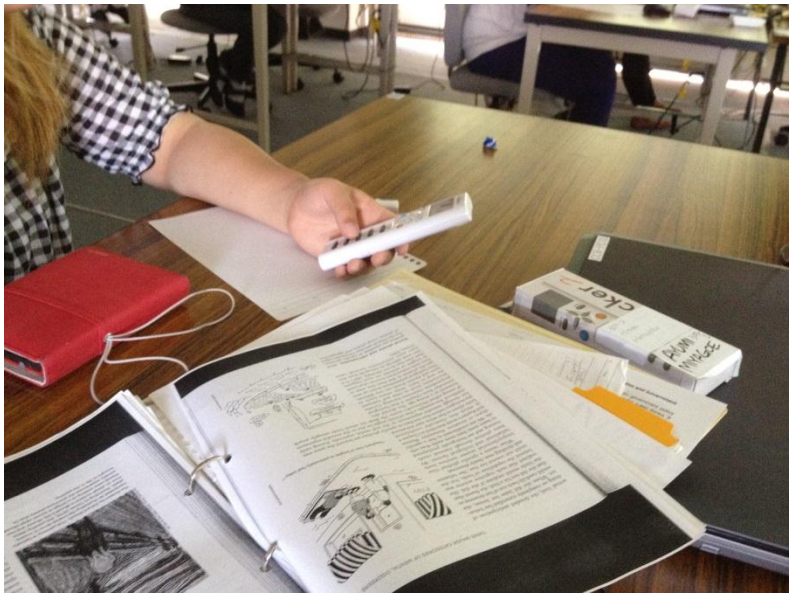

Figure 2 – Student reviewing class material before answering a clicker question

The task, then, for the clicker method was to induce students to make all (their best) intellectual efforts towards comprehending the nuances of designed (in contrast to merely posed) questions. And to read material before answering. The questions or prompts were what one would describe as the more "tricky" styles of multiple choice technique – designed, not for testing for the one (and the only one) correct option among choices. Instead, students were advised to look for, and choose, the best possible choice among alternatives that were (manifestly) somewhat correct or at least relevant to the question at issue. It was felt that this

more calibrated style of question and alternatives could elicit a discerning attention not so much to the details of question and supporting text (however this too, if necessary), but by default or necessity foster the type of mindset (albeit temporary and task-specific) that we might equate with, or equate as, deeper conceptual learning and critical thinking.

The set-up was as follows: students were working on the day with a targeted text (i.e., numbered paragraphs corresponding to clicker question numbers, e.g., 12 questions wrought-over a 12 paragraph sequential argument of a class material piece). Students could consult their personal electronic dictionaries, and of our specialist vocabularies, and importantly, <u>they could also consult and work alongside another person</u>.

This was the idea to conduct CRS in **student pairs** – with 2 students sharing one clicker/remote and responding jointly, giving one answer, with that one pair-assigned device. Ample time was allotted after question presentation before polling is switched on. This allowed each person within all pairs (by now, "teams,") to read independently and confer, and settle on an answer that the pairing felt to be correct or felt to be the best among choices.

In our particular context this (pairing and team) technique proved to be popular but (by our reflection) symbiotic in some culturally specific (and mini-culturally institutional) ways. Firstly, from a molar or general theoretical perspective, the situation was suspected to engender some beneficial social facilitation effect(s). Namely, the mere presence of 'competition,' as it were – in respect to the presence of the other working persons and 'team' pairs – would or could prime for some stimulus effect (on focused attention, arousal, performance, and so on).

But there is also the motivation factor of the notion of obligation as this might pertain to, or impact upon, a partner. We are a very modest sized private college, set in rural southern

Japan, and the students share many classes with each other. They are good friends, may travel to college, study, and may also work together in part time jobs. It is not uncommon for them also to have attended high school and middle school together. They are respectful young people, and of course, cultured in a society in which respect (and pride in respect) plays an important cultural role. So perhaps the diligence and sense of obligation observed between team members (in this small teaching and testing experiment) was different from what one might see, or expect to witness and exist elsewhere – for example, in larger institutional settings, larger cities, or in other regions and cultures.

Furthermore, in the relative absence of other (significant levels of) intra and extra-mural opportunities for competition, then the friendly "team clicker" – with competition itself talked-up to some minor extent by foreigner-instructors seeking to deflect at least some of the ambiance of serious test taking away (leaving intact the advantages of clicker as a teaching and learning rather than purely evaluation and testing tool), then the social production of this competition factor may have offered a learning and experiential bonus.

So the team clicker allowed for a momentary or rare competitive and inter-group team-challenge spirit to take place (for all). The way the students appeared to tackle the reading, intra-team conference, and response-giving was intriguing and impressive. And we also generally had fun with this format. Though purely anecdotal at this point, the overall accurate response performance for the class as a whole was good (again, immediately visible in the polling results/bar charts on projector). The adage that "two heads are better than one" may simply apply, of course. However, very difficult reading was assigned here, and with little or no teaching around it. The observed performance gave the hint of synergy, that possibility that the intra-team conference (after independent reading) may have produced something new. That

is, there is at least the possibly of some level of emergent understanding having taken place. This understanding or 'learning' may not be reducible (always, on occasion) to the merely increased chance of a correct answer residing *somewhere* in two (rather than one) respondents. Certainly, this may have to be measured more carefully within a systematic study (focused on CRS performance outcomes). However, this brief report here, its reminded, is set around a pilot use of CRS and casual variation and experimentation of techniques; the gaining of a modicum of students' perceptions; and offering of some reflected opinion and observation on our own use of the systems (within these cultural and institutional settings). Lastly, it should be noted that sessions of this type (the team sessions) were few in number. Therefore, our ideas might also be refined by sustained practice of CRS within this formula, or through more regularly scheduled occurrences of the technique.

Asking the students what they thought (an explanation of the questions only)

Our small data sample and the descriptive charts (of results) are derived from 36 third year students taking a brief questionnaire on the final day of class. Table 1 lists the five questions presented in our brief survey.

Table 1 - Questions used in the student survey

Q1	The interactive clicker system is useful for assessment and grading.
Q2	Clicker use - with instant feedback - is useful for making actual lessons, for learning and for the discussion/presentation of class content itself.
Q3	I prefer team clicker (allowing me to discuss questions with my partner) rather than responding on my own.
Q4	At the moment, we have approximately one clicker quiz every 4th class. However, some instructors prefer to use clicker during each and every class. For example, they might conduct a short 2-3 question session during, or at the end of each period. Do you think this would be more useful to you than having a (less-often occurring) larger clicker

	session covering larger areas of the course?
Q5	In this class, you were given less readings and more whiteboard explanations of the important themes and concepts (for you to take notes from). Would you have preferred more readings assigned, and for clicker to be based on these (take-home) readings? So that you could prepare for clicker in this way?

Additionally, students had a section on their survey where they could comment and/or give some suggestions more freely in an unstructured way. This merely asked them to comment about their class and use of CRS ("Do you have any further comments about the class and clicker-use?"). Not many further comments were given but what was given proved helpful for our interpretations of the more structured responding.

Question 1 (Q1)

Q1 relates to, or implies the contrast between CRS and the evaluation system customarily used in our institution, and the formula for most colleges and universities. Students typically receive a mid-term – partly providing some evaluation indicating (to student and professor) the level of performance at the half-way points. It also conveniently breaks-up the course, and course content to a degree. The final exam is, of course, administered at courses.' However, CRS use took place throughout the course and students accrued points towards their grade continuously and virtually from the beginning. The CRS component was set to account for some 60 per cent of the overall final grade. CRS points were also set to encourage attendance (with simple participation gaining points). It's projected that even bad performance on a given day (and while points were nevertheless available) nevertheless laid the basis for some learning. After-the-fact discussions and explanations are usually given or take place, and non-attendance was essentially a complete loss (in comparison).

Question 2 (Q2)

Q2 asks students how well they perceived the use of clickers to promote discussion in the classroom; about the delivery of class content; and the effectiveness of CRS (in students' own perceptions) of their learning experience.

Question 3 (Q3)

Some sessions were conducted in pairs and these were called "team clicker" sessions. As discussed at length in body of this paper/report, the main objective of these sessions was to elicit and socially 'produce' the understanding of critical themes and arguments (through reading and student conference) over difficult technical and theoretical material. Students were given an opportunity, read, to discuss thoughts with a partner (from a passage of highlighted reading), come to a consensus, and submit one answer for their "team." The prompt questions themselves were designed as conforming to best answer as opposed to correct answer formula (see main text here for fuller explanation).

Question 4 (Q4)

We opted to add a question here that concerned the possible change to a different approach towards the frequency for clicker to be utilized. Our clicker sessions (set at 1 every 4th class) took up the entire class period, and the instructor(s) felt that this method had some advantages and utility (again, please consult text here for greater reflection on this).

Question 5 (Q5)

As an experiment, and on occasion, students were given a section of material to read – in class itself – and the clicker session was based on that material (usually for team clicker). Such sessions were different from the rest of the course where whiteboard teaching was conducted

with students taking notes (while provided with reading from which the content was based, or as background). We have found it difficult for students to undertake significant pre-class reading, and for them to be able to understand many of the highly technical concepts (particularly in Western-derived and often medico-scientific psychology course content). Embracing such material without intensive hands-on assistance and explanation is very difficult, but students generally comprehend the content well with "on-the-fly" explanation. So in Q5, we tried to confront both possible clicker styles and to see which method students are, or may have thought to be, more comfortable with.

What the students did in fact think

In this section we are going to illustrate the results (from the questions advised in Table 1) and offer some simple interpretations.

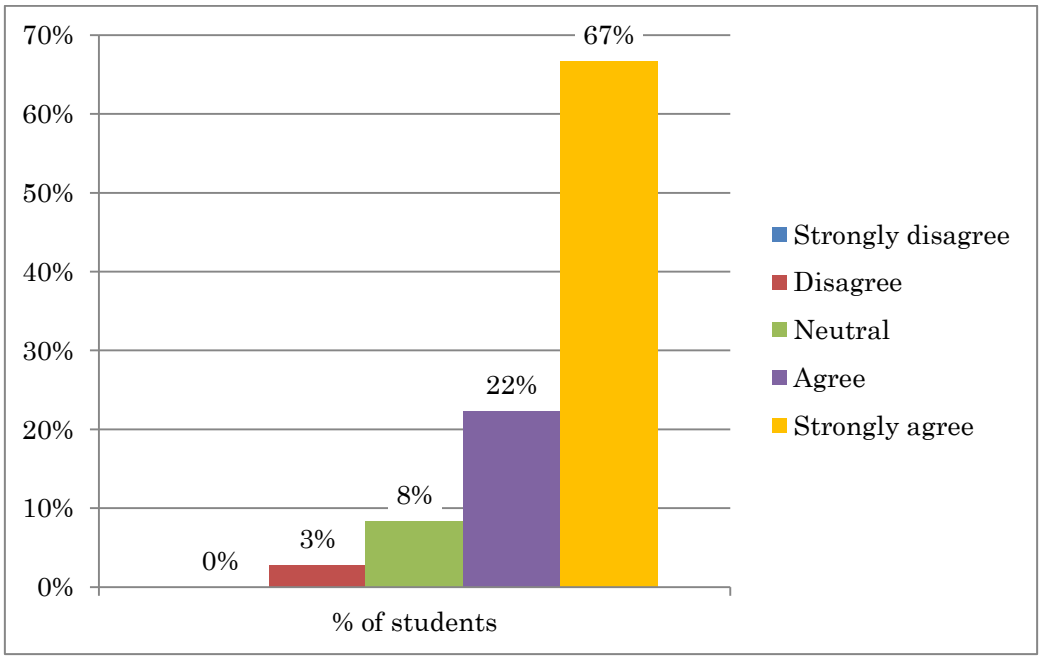

Figure 3- Summary of students' answers for Q1.

As expected, students' answers on question 1 (Figure 3) show that the majority of students agree with the benefits of (and find favor with) the continual assessment offered through CRS. This was somewhat expected after hearing, (and hearing of students' casually offered) remarks and opinions over the duration of CRS use in the courses (2 sections, of a singular course).

When asked about the effectiveness of CRS (Figure 4) as it pertained to the perception of substantive learning and discussion, only a few (6%) of our student sample did not agree that CRS was effective on the point of these central classroom objectives. Unfortunately these respondents did not provide much in the way of additional comments that would perhaps clarify their position. So it may be difficult for us to address this adequately. But it is not unimportant (even though the opinions in this direction were somewhat minimal). Perhaps we would, in a future questionnaire, however, ask for more information immediately below the Likert scale question prompt, rather than at the end of the whole survey.

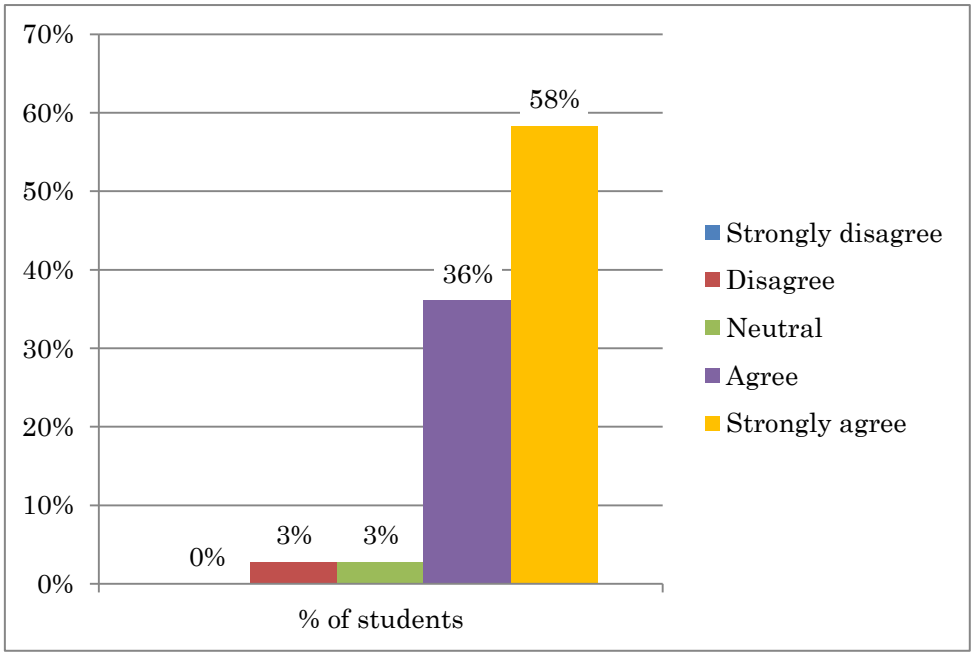

Figure 4 - Summary of students' answers for Q2

The results gained from question 3 (Figure 5, see below) are, more or less, according to expectations. We assumed that while some students would like to work in groups, others may prefer to work alone. And of course, some students in all classes prefer to sit alone.

Additional comments provided by some students indicated that for some, "team clicker" was good because they could consider and understand their partner's opinion. However, other comment providers indicated that being able to answer autonomously (with own assigned device) and later listening to teacher's explanation was more effective and preferred by them. Again in future surveys, it may be instructive to ask whether students felt any pressure to agree with a response that a partner and perhaps good had arrived at.

As discussed elsewhere in this paper, our students are a very cohesive community at Miyazaki. And therefore, it's an interesting question whether in this team condition, and in this micro-cultural context of friends and familiarity (and among young Japanese persons), interpersonal closeness either helps or hinders the assertive resolve to persuade a partner on the matter of a particular choice (based on a strongly felt correctness). Anecdotally for us, the interactions appeared quiet-though-involved and (nebulously) 'impressive,' as was simple overall performance over difficult material. But just how this plays out between paired partners here (in instances of deferring and asserting and in wrong or correct responding, perhaps) remains a fascinating social and cultural and psychological question (in itself).

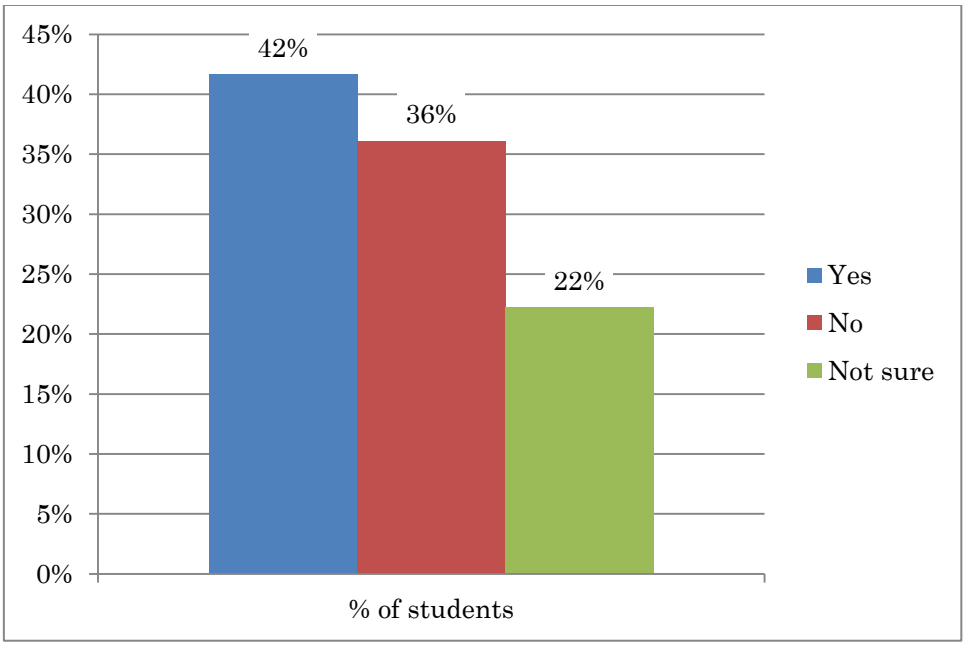

Figure 5 - Summary of students' answers for Q3

This may be overall difficult to interpret, however. Notwithstanding the general ambiance of fun and engagement of the pair/team sessions - and the fact that good, involved reading was appearing to take place (that may have not have been accomplished, or so effectively at home, otherwise) - it is obviously the case again that certain social psychological parameters may have been at play. For example, social facilitation [within and between pairs] as an enabler for increased concentration and as a spur to concentrated focus; but also again, a certain level of social desirability or conformity in acquiescing towards a given response that one may feel not to be what one wished to give, or feel to be correct.

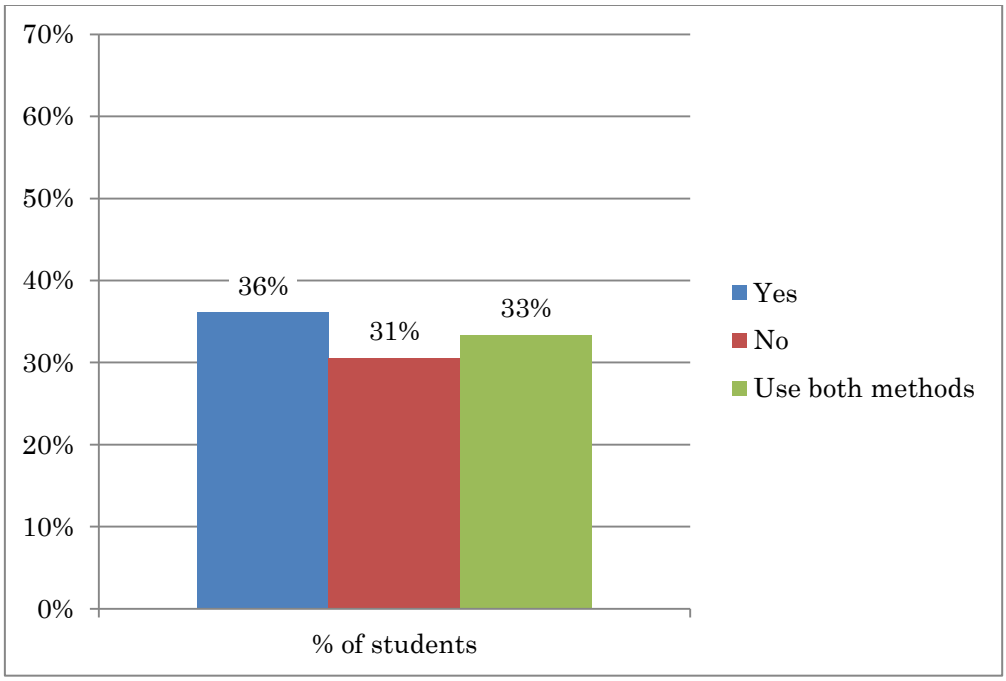

Figure 6 - Summary of students' answers for Q4

In question 4, the results were close to each other (Figure 6). With around 1/3 of our student sample preferring the larger CRS sessions (that were customary) this ran counter to our expectations to some degree. We expected students to prefer to be evaluated over small parts of content, and indeed within each and every class period. But of course, the projective use-methods were just that (projective, or hypothetical). However, the result indicates that these formats (or other formats) are viable at least in the minds of the students, who now are somewhat practiced and familiar with clicker as a technique and teaching/learning technology. And for us these tools and this result open up a space for several user-approaches or for certain hybridized methods of employment. These ideas (of mixing it up, and experimenting, and using the full range of clicker flexibility) are clearly encouraged by this virtual three-way split in survey data here.

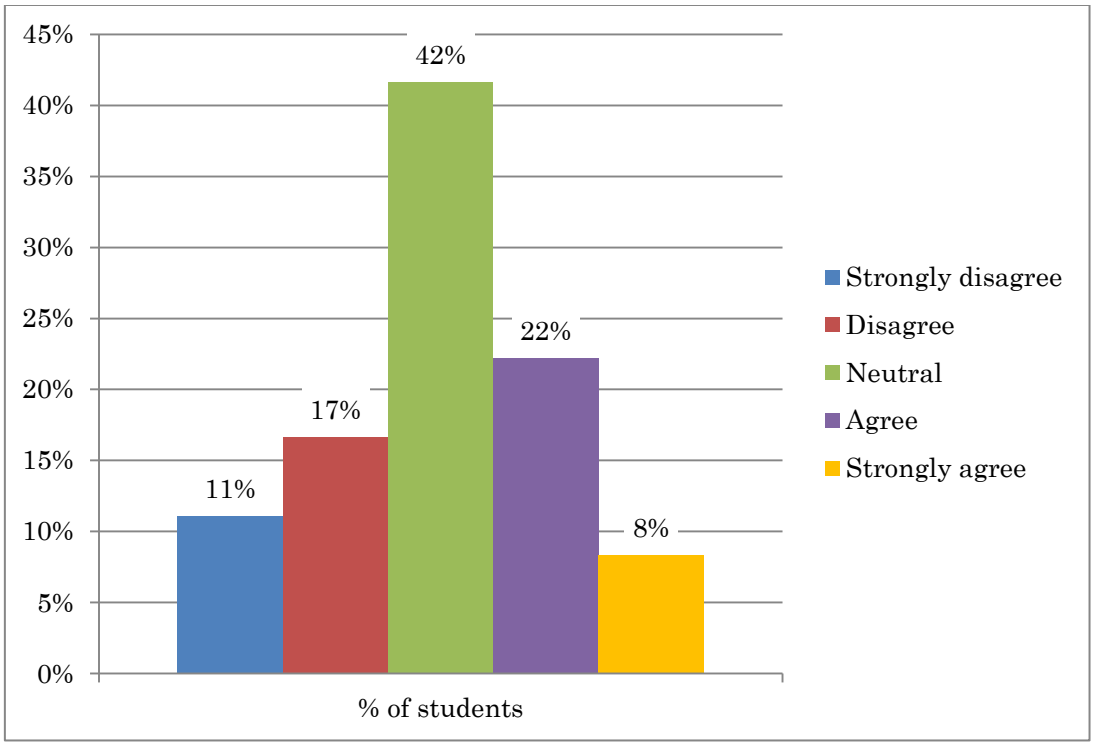

Figure 7 - Summary of students' answers for Q5

Figure 7 shows that again about one third of our small students sample here would prefer more readings and CRS sessions based on those readings. As our students are native Japanese - yet taught, nevertheless entirely in English - it is logical then perhaps that some have stated a preference for texts because it is may be easier for them to acquire, among other things, a valuable vocabulary (and more time and purpose to acquire it). And indeed this point was explicitly included in several comments.

The authors feel that this is a serious consideration, though, in the end analysis, this may be a trade-off or balance to be struck between our stated college missions (a greater focus on ideas and critical thinking) and our obvious constraints over non-native language teaching and instruction. Therefore, elements such as vocabulary-learning, particularly in technical areas,

may need to remain largely a matter of on-the-fly delivery during instruction (and perhaps in CRS question-defining pre-polling moments) or that it is emphasized more as a student's own responsibility (if the teacher pre-advises students, of course, over what concepts will appear, and need to be learned for overall course themes and elements.

The number of "neutral" responses given by students here may be more interesting and challenging to interpret. To conjecture on possible explanations for it, what immediately comes to mind is the notion that students simply do not know whether it would have been better for them, and in their interests, to have had more reading. And in such cases, "neutral" is as good and as valid a response as any. In this sense, another adage can be called forth, namely, 'that what one does not have, one cannot really miss.'

But yet another interpretation can be put forth. And this is purely one that stems from the perspective of student-as-consumer of education, and/or from a purely personal developmental point of view. Firstly, at time of survey, students simply did not have a great deal of time to establish, in their mind what indeed it was that they retained (and can feel for themselves for what they have taken from their learning experience). So in the absence of such a felt opinion, and not having the time in which such a perception or opinion may crystallize, then the more tangible index (of "having-learned it," learned a body of something) - is a textbook. But for us, this is pure speculation. But it's based upon personal reflection of our own biography of student years.

Additional (freer) comments provided by students were instructive, constructive and encouraging. Apart from comments already discussed as dispersed in the preceding passages, three main points appearing with an interpreted level of recurrence were: a) CRS helped

students in following the class and understanding its content; b) Students had a lot of fun using the CRS; and, c) listening to teachers' explanation right after answering questions was a 'consolidating advantage.

Future directions and some further discussion

In large part, and as educators, we feel that the CRS system gave us some culturally beneficial opportunities to gauge Japanese students' comprehension when these students may have been otherwise reluctant to speak and communicate with us in class. This is an omnipresent challenge for foreigners teaching in Japan (see Hammond, 2007). And yet arguably it is one that almost by default (should) encourage better and creative teaching and the adoption of more adaptive and humble attitudes.

Not the least of these is cultivating an ability to not take too much for granted, and to realize that while we lecturers may like to talk and hear ourselves for extended periods, others may not. And in any case the effectiveness of this has to be questioned – everywhere. And it is being seriously questioned in western higher education and in the Commonwealth. These education systems are coming to recognize and deal with their need to move away from teaching viewed as a one-way and a 'one-to-the many' (information transfer) process and enterprise (see, Wlodkowski & Ginsberg, 2009). It is perceived that things must move towards a mixed, more engaging and participatory learning framework. And as such, much of what we do here, of necessity in the ESL and culturally unique Japanese context, is already globally-oriented and progressive. For its part, CRS is just another tool in the tool chest that

foregrounds these overall philosophies, exigencies, and what's essentially in (or of) these local methods that are already practiced here.

However, there is something quite particular about CRS (here and at this overall cultural juncture). And this picks out the instantaneousness, and, (we have to say) the measure of screen presence and involvement with wireless device. Both of these aspects (i.e., instantaneousness, and "the screen") are consistent with one relatively new and one old or tradition pedagogical constraint.

Firstly, these highly visual, instant-result, and technologically interactive elements are – whether we like it or not – culturally, technologically and intuitively/cognitively in sync with today's student (everywhere in the industrialized world). And that young person is, him or herself, highly adapted (in fact, born into) a very different and dynamic world than the old classroom and the teachers that inhabit it (and still control it). One of the authors has recently joked with his class that one the buttons on the CRS/clicker remote, the button [E] – not often used as an option for multiple choice (A-D, in our usage) – can be used, instead, to mute the teacher if it is felt that he is becoming boring for any protracted period. Joking aside, while we should not have to make-merry with students and our classes (and of course, there is work to do) if these young people are jaded, bored, and not engaged – we are not really educating and they are not really being educated and educating themselves.

Secondly, and relatedly, it is the case for teachers (again anywhere but at any historical time and with any type of student) that it may not be apparent in an ongoing class or 'lecture' period (even if it broadly seems student centered or active) – whether they "are getting it." Paper and pencil tests, quizzes, or exercises all take days if not weeks to grade and to establish

this. And if the class/students has manifestly and essentially not been getting it – as may be now clear from laborious (teacher-take-home) grading, then revisiting the topics and arguments now possibly two class sessions later, well after the fact, is an obvious problem. And it is so in several respects. Plainly, the class is now likely to be working on a different topic or indeed module altogether. Furthermore, if the success of course in question really hinges upon a continued following or learning of a building-block/foundational and sequential conversation, then failed teaching and learning (from 2 classes prior) will not just involve going back to amend-learn and literally re-cover certain distinct ideas. It will involve a very much larger wheel to re-invent, and this might just not be practically possible. There may have occurred a collapse of the overarching and critical point of (or that underpinned) the whole course offering. And this may never be re-coverable.

So the provision of real-time descriptive statistics derived from CRS in-class polling is more than a mere gimmick. Though it does nevertheless (depending on presentation) quite often entertain – though it is always engaging and a useful and re-occurring trigger for modulating alertness (again) after the intellectual effort of responding, while perhaps waiting for others to 'vote' and for polling periods to close. Substantively, the timely elaboration and explanation of question-contained points, as they are given (post-polling) within the temporal aspects of its teacher-planned and sequential context, is simply invaluable.

It has been for these given (primary) reasons that we have made some use of CRS over the past 2 years. Incidentally, and for future plans, it is worth noting that virtually all our students here at Miyazaki travel abroad for study outside of Japan. This is integrated into their degree (and if we may also remind the reader that these students undertake their entire higher education, at home, also in a difficult-to-learn second language - English). Further and future

surveys might then possibly tap on pre- and post-travel juxtapositions of the differing pedagogical systems that these young people will experience. And these (surveys) may also involve investigation of the traveling students' likely experiences with (larger-class) CRS use abroad.

But for us also, and administratively, it may be worth pointing out (the often-overlooked feature) that these systems automatically record class attendance without sign-in sheets (at least for those class days for which CRS is used). Presumably, the option (mentioned earlier) to build in smaller clicker sessions of 2-3 questions into every class period would make this provision more attractive (by allowing teachers to dispense with sign-in sheets altogether).

And of course, the more substantive aspects of grading-work and course administration are considerably reduced for instructors as a whole with CRS. We like also that a CRS can be integrated within the course grading policy to any degree desired by the teacher. Student teaching reviews on the subject of CRS (as shown here), and overall teacher/class reviews illustrate favor towards the general idea of continuous assessment. Students may feel that too much weight is placed on final exams, and the ongoing assessment may be seen as a break from this to an extent. This might be a useful consideration in institutions or cultures and curriculums where a heavy of full class load is built into the structure of degree requirements (as is the case here). Freed from the need to "cram" at semester's mid-point and end – for perhaps one or two courses in their semester's course diet – students may feel less stress and pressure. This reduced apprehensiveness may (or may not) be conducive to greater retention of themes and concept.

Lastly, we would like to thank the students for their participation in survey and in CRS use. We are most grateful for the feedback.

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