Top of Form

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | http://celt.ust.hk/ideas/ccl/images/top_header.jpg |  |  |  | | --- | | http://celt.ust.hk/ideas/ccl/faqs/images/header_faq_04.gif | |  | | |  |  | | --- | --- | | **Design Issues** | | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [Will I be able to cover as much material during the semester as I do when lecturing?](http://celt.ust.hk/ideas/ccl/faqs/index.html#1) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [How can teachers incorporate CCL activities into their curriculum so that students learn the skills of successful group problem solving?](http://celt.ust.hk/ideas/ccl/faqs/index.html#2) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [What are the disadvantages of CCL?](http://celt.ust.hk/ideas/ccl/faqs/index.html#3) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [I'd like to try CCL, how should I begin?](http://celt.ust.hk/ideas/ccl/faqs/index.html#4) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [Can I teach using CCL in a large lecture class?](http://celt.ust.hk/ideas/ccl/faqs/index.html#5) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [How do I decide which assignments/activities to make into CCL ones?](http://celt.ust.hk/ideas/ccl/faqs/index.html#6) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [How do I divide students into CCL groups?](http://celt.ust.hk/ideas/ccl/faqs/index.html#7) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [In what ways can technology support the goals of CCL?](http://celt.ust.hk/ideas/ccl/faqs/index.html#8) | | **Delivery Issues** | | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [I feel redundant when they are working in cooperative groups. What should I be doing?](http://celt.ust.hk/ideas/ccl/faqs/index.html#9) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [Should group members be able to throw a person out of the group?](http://celt.ust.hk/ideas/ccl/faqs/index.html#10) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [What happens to the bright students in CCL groups?](http://celt.ust.hk/ideas/ccl/faqs/index.html#11) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [What about the student who...?](http://celt.ust.hk/ideas/ccl/faqs/index.html#12) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [How can I help students learn to work in CCL groups?](http://celt.ust.hk/ideas/ccl/faqs/index.html#13) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [How can I deal with conflicts within the CCL groups?](http://celt.ust.hk/ideas/ccl/faqs/index.html#14) | | **Assessment Issues** | | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [What are the pluses and minuses of using group grades?](http://celt.ust.hk/ideas/ccl/faqs/index.html#15) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [How do I grade CCL work?](http://celt.ust.hk/ideas/ccl/faqs/index.html#16) | | **Other FAQs online** | | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [Cooperative Learning Q & A](http://celt.ust.hk/ideas/ccl/faqs/index.html#17) | | http://celt.ust.hk/ideas/ccl/images/goldbullet.jpg | [Collaborative Learning: Tough Questions](http://celt.ust.hk/ideas/ccl/faqs/index.html#18) |   *If you can't find your question in the list above, please email it to* [*Nick Noakes*](mailto:Nick.Noakes@ust.hk)*.*    **Design Issues**  **Will I be able to cover as much material during the semester as I do when lecturing?**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | Regardless of what type of instructional approach teachers apply, perhaps their primary concern is that they won't be able to cover the syllabus or textbook in the allotted time. This worry is increased when an instructor considers any form of active learning and the quick answer is "yes, using CCL will probably reduce the amount of material covered". However, this is not really the most appropriate question to be asking. It would be more useful to ask:   |  |  | | --- | --- | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | How much material do the students currently retain? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | What type of learning occurs with didactic lectures? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | How much material do I currently not cover with lectures? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | How much material can my students cover? |   Science and Engineering disciplines particularly have grown to the point where it is not possible to cover all of the teaching materials regardless of the teaching method - in fact this is probably true of all disciplines given the exponential increase in knowledge. Adding a CCL component may slightly reduce the amount of material covered but the gains from CCL are impressively documented in the research (see the [meta-analysis](http://www.co-operation.org/pages/cl-methods.html) that David Johnson refers to in his [video](http://celt.ust.hk/ideas/ccl/faqs/index.html)). Students move away from 'keeping up' strategies and a surface approach to learning that results in more superficial and temporary learning and move towards deeper approaches where new knowledge is synthesized.  By asking yourself the question, "how much material can my students cover?", you shift from a teacher- to a student-centred perspective. In doing so, you will be faced with tough questions about what you want the students to learn and how deep you want them to learn the material. The questions are still difficult but are being approached from a different perspective. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **How can teachers incorporate CCL activities into my curriculum so that students learn the skills of successful group problem solving?**   |  |  | | --- | --- | |  | You have three choices here: either you teach these skills (leadership, team, group communication, conflict resolution and problem-solving) as you use groups, or you teach them as separate courses, or you mix the two strategies (perhaps kickstarting with a short course and then consolidation as you use groups. Besides using these direct strategies, students also learn these skills through the group processing reflection activities that are an integral part of CCL. If students pay real attention to their peers during these group processing activities, they will gain insight into the multiple ways that problems can be solved. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **What are the disadvantages of CCL?**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | Problems with CCL result most frequently from the failure to implement it properly. Just putting students into groups is not CCL and some teachers misinterpret it as this. However, when implemented properly, it is almost always better than learning individually. There are a number of anecdotal problems that teachers raise such as:   |  |  | | --- | --- | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | The curriculum is set up for individual work so it takes time to translate it (true but you don't have to convert the whole curriculum to CCL to begin, see the [Models](http://celt.ust.hk/ideas/ccl/MExam/index.html) section of this website). | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | You can't tell who is doing the most work (this may be an indication that purposeful monitoring is not taking place and/or assessments are not aligned with CCL objectives, also CCL does not preclude individual assessments as well as group). | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | Students lack the skills to work together productively (may be true but this is an argument for incorporating CCL). | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | The bright students are held back (the research doesn't support this). |   These are addressed in other parts of this FAQ. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **I'd like to try CCL, how should I begin?**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | The first place to start is to look at your course objectives and outcomes and see if these match with CCL. For example, is the objective to:   |  |  | | --- | --- | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | assist students in comprehending the course material? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | encourage higher level thinking? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | enliven the class? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | improve student-student relationships? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | improve student-faculty relationships? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | remove specific misconceptions observed in previous runs of the course? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | increase learner responsibility? |   However, you may just have an intuition or feeling the CCL is worth a try with your course and this is fine too. In this case, it is worth starting out with informal cooperative learning (see the [Models](http://celt.ust.hk/ideas/ccl/MExam/index.html) section) and then later looking at the learning objectives and outcomes.  You also need to consider the following:   |  |  | | --- | --- | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | Can an existing project be redesigned to meet the [5 criteria](http://www.co-operation.org/pages/cl.html#work) (e.g. [positive interdependence](http://www.co-operation.org/pages/cl.html#interdependence)) of a CCL activity? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | Is there a simple technique that could be used say once a week to allow small-group CCL work? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | How much class time will be devoted to the CCL project? | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | How much time do you have to plan and implement this? |   To see further issues that need looking at see the SMET sites' [Doing CL](http://www.wcer.wisc.edu/nise/cl1/CL/doingcl/DCL1.asp). |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **Can I teach using CCL in a large lecture class?**   |  |  | | --- | --- | |  | Teaching in a lecture theatre where the furniture arrangement is fixed does create difficulties but these are fairly easy to deal with and certainly allow informal CCL activities. You can have students form small groups of 3 or 4 from two students in one row with two other students from either the row above or the row below. You can even move groups around in an effective and organised way within a few minutes. Here a large lecture class is quickly broken down into small groups of students who discuss, and then share with the entire group, their viewpoints about a values-laden problem concerning a central course theme.  This tends to use informal CCL groups as mentioned by David Johnson in the video and in the [Models](http://celt.ust.hk/ideas/ccl/MExam/index.html) section and can be coupled with the active learning techniques associated with the exploitation of HKUST's [Peer Response System (PRS)](http://celt.ust.hk/ideas/prs/index.html). |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **How do I decide which assignments/activities to make into CCL ones?**   |  |  | | --- | --- | |  | Firstly, not all assignments or activities need to be CCL ones. In fact, if this was done for all assessments/activities for all courses without any departmental program coordination, it would create massive time problems for students.  Having said that, the key is to look at learning objective/outcome for the assignment/activity and the question to ask yourself is to what extent the objective will be furthered by asking students to work in CCL groups. Is the task complex enough that it would make it impossible on a practical level for an individual student doing it alone? Does the outcome require students to truly synthesise their work in a collaborative way as opposed to doing separate parts and handing them in at the end? Does the task draw on the strengths of group collaboration e.g. drawing on the skills and abilities of a mixed group of people? |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **How do I divide students into CCL groups?**   |  |  | | --- | --- | |  | On deciding to use CCL tasks, one of the first questions you will face is what size of group is best. The task itself and its objective may quickly answer this question for you but CCL practitioners generally say that small groups of three or four students work best.  Another question is whether groups should be self-selecting or not. For short informal CCL groups, then it is simplest to just ask people to turn to their neighbour (perhaps alternative between person to the left, to the right, in front or behind). For more formal CCL groups, then you might establish a set of criteria for group composition and then let students form groups that meet these criteria. If you have more than one major (longer-term) CCL task, then could let them self-select for the first one and then cross-group (randomly selecting) them for the second one so that they mix. Such mixing is good for lots of reasons not least of which is that this will happen in the workplace and a key skill is learning to work with people who you initially don't know that well. Group composition criteria can include background knowledge/experience, ability, skill sets, working styles, learning styles, etc. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **In what ways can technology support the goals of CCL?**   |  |  | | --- | --- | |  | The recent push to use the new Information and Communication Technologies (ICT) to support teaching and learning in higher education is based around active learning techniques; particularly those of Computer Supported Cooperative Learning (CSCL) for which there is even an [annual conference](http://newmedia.colorado.edu/cscl/) on just this subject.  One of the issues with CCL is that only the products of out-of-class projects are visible. However, by using CSCL in an online medium, it is also possible to have the visibility of in-class group processing transferred to out-of-class activities. The discussion forums in the most popular virtual learning environments such as WebCT, Lotus Learning Space and Blackboard are one means by which this group processing can be made visible.  There are a whole range of possibilities for supporting CCL with technology and these can be seen with the [IDEAS Online Learning and Teaching portal](http://celt.ust.hk/ideas/olt/). |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)    Delivery Issues  **I feel redundant when they are working in CCL groups. What should I be doing?**   |  |  | | --- | --- | |  | This is the time when you need to be monitoring the groups. Initially, you need to see through the way they are working, whether or not they have clearly understood the task purpose and process. Even though you gave instructions at the start and checked these with a few groups, not everyone may have been paying full attention. You can also monitor to see if all students are actively engaged with the group?  Because students are working in cooperative groups, they will be verbalizing not only their understanding of content, but also of process. This allows you to gain insight into the way they go about tackling the task and thus you can see if some procedural aspect has been misconceived.  It is important that you take notes during monitoring so that a) you have information to feed back to groups on their learning and b) you send a message that you are not abdicating your responsibility as a teacher when they are active.  All monitoring should be purposeful and be seen to be purposeful. While students are learning about the subject, you are learning about the students and their learning processes with the subject, as well as about the ways they interact. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **Should group members be able to throw a person out of the group?**   |  |  | | --- | --- | |  | The key word here is patience. You need to sit in on the group and observe their interactions. You will then be in a better position to suggest possible solutions and counsel group members privately if needed. Removing someone from a group should be a last resort for them and you. In work contexts, more often than not you have to learn to accommodate individual differences whatever they may be.  It needs to be stressed that there is accountability and responsibility by the group for each individual within it. With a group that is going to work together for some time, a lot of these group issues can be pre-empted by getting the group to take time out at the start to discuss and agree group responsibilities and accountabilities, perhaps with the class to collectively draw up a list of ground rules for group work which can be typed up as a sort of informal contract.  Eliminating someone from a group will undermine the goal of positive interdependence not only for that group but for the whole class. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **What happens to the bright students in CCL groups?**   |  |  | | --- | --- | |  | Implicitly a lot of people believe that the bright students are better off working alone as they will be taken advantage of by their less able peers. However, bright students also gain in two ways. In having to explain to peers, in having in a sense to teach them, they are undergoing deeper cognitive processing increasing their own learning and retention; termed cognitive rehearsal. The other factor relates to their self-esteem which is known to have a significant impact on learning. By helping their peers, rather than being labeled"nerds" (or whatever term is used in a culture), they are seen as valued resources and in-demand group members. They move from social isolation to social integration.  Also remember that not all time is likely to be spent in CCL groups. It is often productive in terms of learning to mix CCL groups with individual work. Note that individual work does not have to be synonymous with competitive work. Also sometimes, it is useful to have all the bright' students in the same CCL group to extend their thinking. Flexible classrooms in terms of variation of student grouping and composition are ideal. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **What about the student who...?**   |  |  | | --- | --- | |  | There are numerous questions that begin like this; the student who is unmotivated, bossy, silent, resistant, abusive, etc. The first thing to remember about CCL, in fact any active learning approach, is that it is not a magic bullet! The second is that you are going to need to observe the student in action and then perhaps brainstorm with a colleague who also teaches them regularly, the most appropriate to deal with the situation. Thirdly, it is also worth remembering that their student peer group may be better at solving the issue than an adult. Another point to remember is to try and not pigeon hole the person as a "difficult student", but to think in terms of what is it about this student's situation and their prior experiences that is giving rise to this behaviour. Finally, most of these problems can be proactively pre-empted by having the class establish ground rules for cooperative/collaborative work. You can also give over 10-15 minutes at the beginning of each class with a "What would do if a student ...?" discussion question to expand on these ground rules as you progress through the course. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **How can I help students learn to work in CCL groups?**   |  |  | | --- | --- | |  | After years of learning competitively, students may very well not know how work productively in CCL groups where their grade is dependent on their ability to work together effectively. This lack of preparation may undermine the effectiveness of the CCL assignment/activity and prevent students from meeting their CCL objectives. This may mean you start the CCL activity with a team-building exercise as a way of helping them develop as a team. Issues that you are likely to need to cover, whether integrally or as a separate unit on CCL work, are group dynamics, group roles, awareness of a group's strengths, weaknesses and skill sets, group communication and work styles. Whatever way you chose to deal with these group skills, perhaps the most important area to cover is that of individual and group responsibility and accountability which is the key to positive interdependence and thus the maintenance of productive group relationships. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **How can I deal with conflicts within the CCL groups?**   |  |  | | --- | --- | |  | They most important point to remember is that a certain level of conflict is in fact desirable and is the natural product of a heterogeneous group expressing differing opinions. The total absence of any conflict is likely to indicate that the group is not functioning optimally and is avoiding issues. If groups work through these conflicts openly in a mutually respectful way then the will become stronger in terms of their products and processes. A key factor is whether the tension is around the task content or around group personalities. As a CCL teacher, you need to keep your finger on the pulse of each group as well as the class as a whole by using progress reports and team assessments. When groups do have problems, you will need to decide to what degree you wish to intervene and in what way in order to help your students resolve the problem. You could invite students to your office either individually or as a group to discuss their problem and generate possible solutions. You role is that of discussion facilitator rather than problem-solver as they need to develop the skills for conflict resolution. Changes to group membership are the ultimate last resort and only for extreme cases.  You need to make it clear from the start of the course that groups are expected to work through their differences. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)    Assessment Issues  **What are the pluses and minuses of using group grades?**   |  |  | | --- | --- | |  | The key point here is that group grades need to be aligned with group objectives so that they send strong messages about positive interdependence (see David Johnson's part of the video on this aspect).  If you are new to CCL, then it may be best to start off by not giving group marks to serious material but by asking students to work to help each other prepare for the test or defend the project and rewarding students with bonus marks if both score high.  In most implementations of CCL, there is a mix of group and individual grades. This helps students in the lower levels while not affecting the students in the upper levels. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  **How do I grade CCL work?**   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | This is probably the biggest challenge that teachers face when implementing CCL and for an extensive treatment of this see the online book "[Assessment in and of Collaborative Learning](http://www.evergreen.edu/washcenter/resources/acl/index.html)". CCL activities typically have multiple goals; individual learning, group learning, successful functioning of a collaborative group and the co-production of a quality product. This means that both the process and the product need to be evaluated. Two important issues are how is individual work to be evaluated and how are group processes to be evaluated? If you have asked for individual work to be submitted, then how can group success be evaluated?  With products like reports and presentations, it may be possible to have students identify their contributions and award marks for these as well as awarding marks for the overall coherence which needs to be a group effort. If there has been no group effort in making the parts into a whole, this is obvious through the products disjointedness. Another way, is to have students work together on the early stages of research and planning and then individually from then on.  With CCL activities a strategy used by David and Roger Johnson is to award bonus marks when everyone in the group scores highly and further bonus marks if the whole class scores highly. This they have found to be an excellent way for promoting CCL within and even between classes for very large course enrollments.  However, a successful final product is not always a clear indicator of a productive group process. To measure process and individual accountability within this, you need to use multiple forms of formative assessment throughout the project and not rely on summative assessment. These different forms include:   |  |  | | --- | --- | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | observation notes you keep of group processes when monitoring (including group interaction behaviour - attentive listening, on-topic discussion, equality of level of participation by each member) | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | group progress reports and updates including workplans (e.g. Gantt charts) that show progress against plan and provide reasons for differences | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | email and web-based forums for group process communication and to communicate progress | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | individual learning journals that ask students to write up their reflections on group processing | | http://celt.ust.hk/ideas/ccl/IMAGES/greysquare.gif | student peer- and self-evaluations of teamwork/group processing |   Finally, you can combine these process evaluations above with those of the final product deciding in advance what relative weighting you are going to give to process vs. product. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  Other FAQs online  [Cooperative Learning Q&A](http://www.co-operation.org/pages/qanda.html" \t "_blank)   |  |  | | --- | --- | |  | This is from Roger and David Johnson's Cooperative Learning Center website. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top)  [Collaborative Learning: Tough Questions](http://www.wcer.wisc.edu/nise/cl1/CL/question/TQ1.asp" \t "_blank)   |  |  | | --- | --- | |  | This is the National Science Foundation's Collaborative Learning section of their "Innovations in Science, Maths, Engineering and Technology" website. |   [Back to top](http://celt.ust.hk/ideas/ccl/faqs/index.html#top) |

Bottom of Form

|  |
| --- |
| [Home](http://celt.ust.hk/ideas/) | [Introduction](http://celt.ust.hk/ideas/ccl/Intro/index.html) | [Getting Started](http://celt.ust.hk/ideas/ccl/SKit/index.html) | [Models and Examples](http://celt.ust.hk/ideas/ccl/MExam/index.html) | | [Experience Sharing](http://celt.ust.hk/ideas/ccl/EShar/index.html) | FAQs | [TL Knowledge-Base](http://celt.ust.hk/knowledge/index.asp?portal=5&search=1&divertFromPortal=1) | [Contact Us](mailto:ctideas@ust.hk) | [CELT](http://celt.ust.hk/) | [UST](http://www.ust.hk/) |  Center for Enhanced Learning and Teaching Hong Kong University of Science and Technology Clear Water Bay, Hong Kong Tel: (852) 2358 6811 Fax: (852) 2358 2201  Last modified: March 25, 2006  Copyright 2002 by CELT, HKUST All rights reserved  *This site is maintained by CELT of HKUST. Materials at this site may only be used for educational and nonprofit purposes only. For other uses, please contact CELT for permission. If you would like to link to us, we would appreciate NOT appearing in frames and a notification of the linkage.* |