

Making Learning Active

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This paper chronicles one college's experience of building, using, and reflecting on practice in an Active Learning Classroom (ALC). The information is divided into two sections: Part One tells the story of how our ALC became a reality; Part Two explores the experiences of teachers who used the room during its first term of operation.

Part 1: Active Learning: One Cegep's Story

ALC from Idea to Room

How do you turn an idea into a real thing? Architects are good at this, and maybe teachers are good at it when it comes to learning scenarios, but when I realized that having an Active Learning Classroom (ALC) at our college would add value to our students' college experience and provide teachers at the Cegep de Sept-Îles with the opportunity to experiment with active learning pedagogy in an environment that was set up to support small group communication and interaction, I didn't know what I needed to do to get things started. Here is the story of what we did.

Theoretical Basis for Active Learning

I don't remember the first time I heard the term "active learning." Back in 1986 while pursuing a Bachelor of Education at the University of Prince Edward Island I certainly remember learning about Piaget and "hands on" learning, and we designed "activity centers," but I was only introduced to Vygotsky's theories about the "More Knowledgeable Other" (MKO) and the "Zone of Proximal Development" (ZPD) thirty years later in courses for my Masters in Teaching at the College Level with University of Sherbrooke's Performa Master Teachers Program (MTP). These concepts are central to the Social Constructivist view of learning, which forms the theoretical basis for the practice of active learning. Performa's MTP gave me a solid argument for the effectiveness of an active learning approach, and it also provided justification for having an ALC at our college. But before I could even want that kind of a space, I needed to find out that such a thing existed.

A Very Short History of Active Learning Classrooms

I do remember the first time I saw photos of an ALC. I was part of the first "Blended Learning" cohort of the MTP. Prior to that year, Performa courses for Anglophone college teachers were usually held in person in the Montreal area. In the new format, students like me could take their masters courses at a distance from Gatineau, Gaspé, or Sept-Îles! I was so excited I signed up for two courses, one in the English MTP and one in French Performa. The course in French was an information technology course given by Raymond Cantin, called Web 2.0. Cantin is passionate about educational technology; he had even visited post-secondary institutions in the U.S. such as the famed MIT (Massachusetts Institute of Technology), and he shared some of the exciting innovations he had seen with his Performa class. At MIT he visited new Physics Technology Enabled Active Learning (TEAL) classroom that was set up in what

we now think of as ALC, but were then modelled along the lines of SCALE-UP¹ He showed us photos of classrooms that were set up almost like restaurants, round tables with designated whiteboards. We could see students working in groups and the teacher circulating to give assistance where needed. Cantin cited research about improved learning outcomes and I remember thinking “How can we get one of those in my college?”

The Group-work Room That Never Happened

Strangely enough, I would like to begin with a room that didn't happen. For the past twenty-five years the language module at our cegep has been asking for a room for group work, with small round tables, or even those odd-shaped tables that you can rearrange to make pentagrams, or lines, or “V” shaped groupings. No one is certain why this did not happen: too costly, not enough room, or maybe not enough other teachers who wanted to use this kind of space, but whatever the reason, and somewhat to the frustration of the language department, that room stayed an idea, while the ALC classroom became a reality. Why did the ALC project succeed? I am not sure we will ever have the answer, but it is worthwhile to consider, if it can help other projects go forward in the future. And that may be one significant difference. The ALC became a *project*. I wrote it up and provided photos and links and literature to back up the need for, and benefits of, such a room. We also provided an action plan and a list of teachers and support personnel who were involved. We provided tangible goals and outcomes for our project, and when the project was accepted, teachers were allocated some release-time for modifying course material and activities during the first term in the ALC. But I need to go back even further in the story to explain how we got those people involved.

A Day-Tour of Seven Active Learning Classrooms in Montreal

Five years ago I attended the annual Society for Teaching and Learning in Higher Education (STLHE/SAPES) conference in Montreal, and as part of that gathering they offered a full-day pre-conference tour of active learning classrooms in the Montreal area. I signed up and eagerly embarked on that bus! Our tour guide was University of McGill's active learning classroom guru Adam Finkelstein. He walked us through three different ALC on the McGill campus, from their first ALC in the Education building, to an ALC that was a couple years old in the science department, and finally to a very recent, state of the art, blended learning set up (it included the technology for efficient video connections with distant sites) Continuing Education classroom. The three spaces differed greatly; we saw the evolution of ideas about design and use. The first had larger round tables with desktop computers in the middle; the second sported tables that were elongated “V”s with room for computers and written work. The third space was a revelation for me. The tables were tiny ovals, and there was no visible technology. Each table had a small flap in the center you could open and pull out connectors for personal devices, but the focus was really on facilitating communication between students, not on the technology. I started to get a vision of the kind of space I hoped to see created back at my college. The next stop on our tour was Champlain Saint-Lambert. Here we visited an older science ALC that had a “wet” side with standard lab tables, and a “dry” side with round tables sporting desktop computers in the middle. Then down to a basement ALC where Jim Sparks, another active learning guru, showed us their newest design: a teacher's station in the centre of the classroom with connections to all the technology around the room, and interactive whiteboards associated with the student groups all around. This was high tech. Our last stop on the day-

¹ This acronym has changed several times over the years; for more information follow the links in the references.

long tour was at Dawson College where Chris Whittaker and Elizabeth Charles, more famous names in active learning, showed us two classrooms, a physics lab where Whittaker joked that you *could* rearrange the tables to create a traditional lecture style classroom, but that would be a bit like using a Lamborghini to transport gravel, and finally to the classroom I would model my ideas for the Cegep de Sept-Îles ALC on, a theme-designed ALC that is built to mimic nature, imitating a leaf of a plant, with the stem traced in a curved green bar on the ceiling, an outline of a pale green leaf shape on the floor, with pale-wood patterned table-tops placed to look like they have grown there, nestled in the curving walls that cocoon the space. No computers on the tables at all, just one wireless keyboard and mouse per group, so they can operate their interactive whiteboard. There is enough space for a few students to stand between the board and the table so they can get up there and explain things to their peers. And the tables! The tables are the ones I wanted without even knowing they existed! The folks from Dawson designed these tables and had them built in-house. They are sculptured to make people talk to each other. Narrow at the far end opposite the screen, they fan out so everyone in the group can see information being projected without being blocked by the person beside them. I was enchanted! Now I had a vision of some of the possibilities: practical, technical and artistic; and I was ready to bring what I knew back to my college and share it until I found people who would get caught up in the possibilities of this new kind of teaching and learning space.

Bringing the Idea for an ALC to Cegep de Sept-Îles

I took notes and photos and videos of the tour so I could share information with people at my college. Adam Finkelstein caught our attention right at the start with the notion that air is the most important element in your ALC. If you have computers running and lots of bodies, the heat goes up and the oxygen goes down. No one is going to want to be in a classroom where it is difficult to breathe. You need to think about noise, and space, and lighting. Noise! I hadn't thought about noise. Imagine thirty people all talking in a small room. Finkelstein suggests sound absorbing wall panels. All the ALC experts share their wisdom: the tables and chairs are the most important technology in the room. Think about how the tables are shaped and positioned. If you are closer to the person behind you than you are to your group members across the table, then who are you likeliest to chat with? How noisy are the chairs as they roll on the floor; try to hear thirty chairs, times four wheels each; one-hundred and twenty squeaks each time you ask for everyone's attention to give instructions. Do you need the chairs to swivel so students can easily turn around in their place to look at you or other groups as they present? Where will students put their coats and backpacks; keep in mind they do not like to be separated from their things. Will the tables be movable? Where will the wiring go? Do you want windows? Writable walls are key. Will the writing surfaces be high-tech or low-tech? What capacity are you aiming for: twenty students, thirty students, more? Avoid creating a front of the classroom; maybe avoid the teacher's desk altogether, go for a small podium, and a movable one at that. Once I had all of this information I needed to find someone to share it with back at my college.

I showed the ALC video to the Dean of Studies. I talked about the ALC to anyone who would listen. I made my little overview video of the ALC tour available on our college server and sent people the link. Jean Desbiens, the person in charge of our technology services, liked the idea of an ALC. We met a few times and discussed what kind of technology it will take, but we often talked at cross purposes; she kept imagining a large computer lab and referring to "e-learning," which was beginning to be all the rage at that time. I kept trying to make it clear that this room is more about pedagogy than technology, but I was

happy that there seemed to be a budget for several projectors and interactive whiteboards that could be used in the room if we can find a space. Finding a space becomes a huge problem. There were two new pavilions built at our college during the five years I pushed to get an ALC, and eventually that helped ease the room scheduling a little, but it is not as though there are classrooms sitting around not being used that we can convert to an ALC, they are all booked, all the time.

The ALC Project

Things begin moving when Marie-Ève Vaillancourt, our Assistant Dean of Studies, got behind the project. We started to look at school furniture catalogues and wander around the cegep looking into classrooms, trying to imagine them as an ALC in our mind's eye. In October of 2015 we created a short online survey to get an idea of how many teachers at our cegep were already using active learning strategies in our regular classrooms. We asked four questions and thirty teachers responded: 1) Do you use active learning techniques (ex.: flipped classroom, peer feedback, portfolios, project-based learning, case studies, etc.)? Twenty-four teachers (83%) answered yes. 2) We made a checklist of various active learning techniques and asked teachers to check off the ones they used. The five most used were: flipped classroom, project-based learning, case studies, and brainstorming (all of these had ten or more checks). 3) What percentage of your courses do you consecrate to active learning? For those who used these techniques, answers ranged from 10% to 75%. 4) Would you like to be part of a community of practice involved in active learning? 16 teachers (55%) responded yes, while 9 were not sure. This survey gave us concrete information to move forward with. We now knew that there were many teachers who were already using active learning strategies, and we knew that we had several teachers who were willing to be part of a working group. We met with Anik Boileau, our Pedagogical Advisor, and started talking about where we needed to go from here. Anik started looking for material on active learning written in French. My role was to contact people from Dawson College to see if we could get some information on the measurements of their room and their interesting tables. We hit the jackpot! Chris Whittaker, the active learning expert mentioned in description of the STLHE ALC tour, wrote back and gave us an incredibly helpful list of bullet points that he felt were extremely important to the process of creating an ALC in our college. Here are some rephrased highlights:

- Get all parties involved: teachers, support staff, technical department, and administration
- Establish a small, pedagogically focussed, working group
- Identify what you want to do in the room
- Base activities on research
- Match the physical space to activities planned
- Spot problems (cost, availability)
- Find solutions while keeping the pedagogical active-learning focus
- Offer a choice of two or three designs to the larger group
- Re-work proposal
- Remember to keep the active learning focus -it can get lost if people making decisions do not understand the pedagogy, keep the working group in the loop
- Schedule construction with enough time to let teachers practice before term starts
- Try to get some release time for the first users to get things rolling
- Make sure the room stays available in subsequent terms for teachers who have invested time modifying their courses

We followed Chris Whittaker's helpful advice. We created our larger support group with representatives from the Administration, Technical Services, and Material Resources. The latter, Caroline Côté was a wizard for sourcing materials and answering questions about furniture and walls and floors. She found a way for us to order materials and make our own in-house tables, not exactly like the Dawson tables, but lovely in their own way. I wrote up a project that was accepted; six teachers got release time and became "Les compagnons de l'apprentissage actif"! We held meetings and decided on design and colours for the tables and chairs, we decided on a room and it was painted and prepared. They bought five whiteboards, three attached to the walls and two on wheels. They ordered rolling chairs that swivelled for the students and one higher rolling chair and a small height-adjustable rolling table for the teacher to place books and papers. Our working group learned how to use some new technology and even met with a reporter from the local paper who wrote a story on our new ALC. We created a folder on Google Drive where we could store photos of our students using the ALC². In the folder we made one document to record problems and solutions and another document to keep a record of some of our successes in the ALC. We are putting together a handbook that will be available on our internal cegep network, it is based on our experience in the ALC that other teachers can use to get started; this paper will be included in that document. We continue to share our experience with our colleagues during pedagogical days and in casual exchanges. We are trying to find ways to get more teachers into the ALC; we hold meetings and activities there to raise awareness. In two years there is a plan for a high tech ALC. We succeeded! We have our ALC at the Cegep de Sept-Îles. This idea became a physical reality. Now we are ready to reflect on what we learned during our first term of teaching in the ALC.

Part 2: Making Learning Active, Attributes of Effective Active Learning Scenarios

This section examines the attributes of effective active learning scenarios using an informal classroom research approach through qualitative analysis of my own and other colleagues' active learning scenarios chosen from the Winter 2017 term in Cegep de Sept-Îles' newly launched active learning classroom (ALC). As part of our Active Learning Fellows Project teachers recorded and reflected on teaching and learning activities they had attempted in the new ALC. We collected examples from a variety of disciplines including: literature, biology, accounting, second language learning, nursing, guidance counselling and social work. We explored elements that appear to add to the success of a learning activity. Based on informal reflection on our experience in the ALC, contributors to success seem to include elements such as student motivation, appreciation, engagement, interaction, time on task, and, it goes almost without saying, tasks that increase understanding and mastery of learning objectives.

All learning is active. Think about it, the definition of significant learning is change. Learning is, by definition, an active process that requires a change in the learner. If I am listening to a lecture and I am learning something from it, that means I am making connections between the new information and the things I already know, I am also classifying it and organising it so I can find it again. That is active even if I am not jumping around, building something, solving a problem or having a discussion. Those are the kinds of things we picture when we hear the term active learning. What do we mean when we talk about "active" learning in the context of and ALC? It may be most easily defined by what it isn't. It isn't one knowledgeable person standing at the front of the class telling students information for three hours straight. In the ALC, we must avoid giving lectures. Most of us need to "tell" our students things, but

² We had students fill out release forms for their photos.

when students walk into an active learning classroom the physical layout of the room sets up expectations for a different kind of learning experience than sitting and listening. First of all, students are not necessarily facing the teacher. Second, they are grouped in little conversation shaped spaces that encourage social interaction with the people at their table, and third, there doesn't seem to be a front to the classroom, in fact, it feels like each group has their own front with those white boards looming above them. The following section of this paper attempts to shed light on what active learning might look like in an ALC.

Three Questions About Active Learning

Let's explore the nature of active learning using three different questions: 1) What seem to be some of the factors we need to consider in active learning?; 2) How do I take a traditional lecture style lesson and transform it into an active learning scenario for my students?; and finally, 3) What can we learn about active learning by looking at activities that went well for other teachers in our new active learning classroom?

1) What seem to be some of the factors we need to consider in active learning?

We brainstormed a list of apparently significant active learning features and it includes: building a cache of pertinent shared knowledge prior to the group encounter; creating common ground at the beginning of the session; setting the stage for social presence; orchestrating a puzzle to be solved together; creating a need for a new understanding; manipulating a need to explain things to each other; (teacher) creation of concrete or "touchable" models for the group to manipulate and help concretize thinking; demanding that students represent material in creative, original ways; asking students to make their thinking visible and audible (to themselves, their small group, and the whole class); acceptance and appreciation for new, unexpected and various student responses or solutions to questions or problems; and opportunities for sharing and comparing small group responses with the larger group.

Further reflection on our first term using the ALC considers the role of assessment in relation to active learning activities. Most active learning scenarios can also function as formative assessment opportunities because they make thinking and learning visible to the teacher and the students, allowing consequent teaching and learning to be informed by this newly available vision of student understanding. But should activities in the ALC "count" for marks, or will this inhibit creative thinking and hamper diversity in approaches to tackling problems? To date, the author and several of her colleagues have found that rather than functioning as summative assessment, many active learning activities in our new ALC aim at building understanding for upcoming assessment tasks that will be performed individually, often outside of class, using clearer understandings developed during the active group activities. To date, it appears that activities in the ALC function as formative, more often than summative, assessments. But this could be a consequence of our beginner status as teachers in the ALC; we may get better at creating collaborative activities that also function as summative assessments.

The following table connects some elements of active learning with examples taken from learning scenarios teachers in the Active Learning Fellows group used in Cegep de Sept-Iles' newly opened Active Learning Classroom (ALC) during the Winter 2017 term. The list of elements comes out of reflection on practice by the project participants both in writing on shared documents in Google Drive and from verbal exchanges during several meetings the group held throughout the term. There are certainly lots of

other attributes associated with effective active learning activities, but below you will find a list of some of the elements we noticed.

Table 1: Some Elements of Effective Active Learning Activities

| Element | Comments | Examples |
|---|---|---|
| Prior Knowledge | Students need to have information to work with, if everything is new it is almost impossible for them to work together on something, therefore review, practice, and exploration of previously introduced material seem to facilitate active learning activities. | -review of Synthesis of Proteins (Patricia) |
| Concrete or Physical Manipulation | Find ways to take theoretical information and make it three-dimensional. Try transforming the learning into a physical experience. | -Fiction Kits (Sharon) -Acting out protein synthesis (Pat) |
| Teacher must not tell! | Students need to figure things out; their interpretation may be different, but they need to back it up with data. We learn a lot through “errors.” | -Poems (Manon) -Poems (Sharon) |
| Students must make their ideas clear to their group. | Create situations where students must explain their thinking to their peers. This can happen with words, but do not underestimate the power of drawing (this was incredibly effective, we had no idea how enthusiastic students would be to draw on the white boards, and it doesn’t seem to get old). | - Most of the activities |
| Listen to others | This is a key element for collaboration; students need to develop the ability to attend to and respond to each other, building on their shared knowledge to find solutions. | -Moving groups (different coloured felt pens) |

2) How do I take a traditional lecture style plan and transform it into an active learning scenario for my students?

Now for the second question: How do I take a traditional lecture style plan transform it into an active learning scenario for my students? I will give you one more detailed example and then you can look at the table below to see a variety of examples of traditional style lectures and their ALC version provided in point form. My example is one of my favourite classes from this past term, a lesson on “plot” in short stories, from an high level (103) English Second Language course. Even if you do not teach literature,

you probably had to, at some point in your life, sit through a class where someone explained the elements of the short story to you: plot, setting, character, narrator, symbols, you get the picture. I have done my share of standing at the front of the classroom, clicking through a slide presentation, trying to explain these narrative elements with more or less success. In the new active learning classroom I wanted to figure out a way to get the groups to do something that would help them grasp the idea of plot as the way the events in the story are arranged. I wanted it to be concrete, something they could touch and argue about and work to make their ideas clear to their group and then present their group's version to the other groups to compare their thinking with their peers. I chose an extremely short, short story, less than a page long, that has a very convoluted plot. The story begins at the end with no exposition, and backtracks several times, providing the reader with flashbacks that take them back to the protagonist crying in his cradle. I made two identical lists of the events as they happen in the plot for each group. On one of the papers I cut the events into strips that the students could rip apart, and I asked them to work in their groups to rearrange the events so that they were in chronological order. Below is an illustration of the papers on the table in the rearranged order decided on by the students.



Figure 1: Plot Elements on Paper Strips

The students worked together to figure out the chronological order, and then I asked the groups to make an illustration of the plot for the story on their whiteboards. There is a traditional method for drawing a plotline, but I did not teach them this. I told them I deliberately gave them minimal instructions because I wanted to see how they would do it, and that I hoped that all the groups would come up with different ways of depicting the plot of the story. This worked really well. As you can see in the photos below, the groups found original ways to depict the plot, one using a comic book technique and starting with chronological order and then used numbers to show the order from the story. The other group used a line diagram then used numbers to show the chronological order. The groups then explained their illustration to the whole group.



Figure 2: Chronological Order

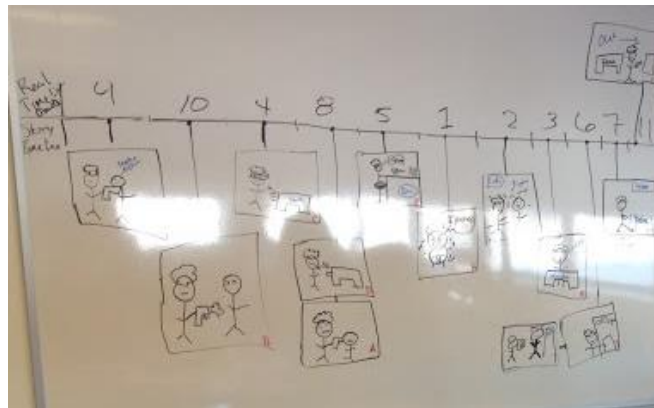


Figure 3: Order in the Plot

The examples in the table below are from a variety of disciplines and can help build a picture of what a traditional lecture can look like when a teacher modifies it as a learning activity for the ALC.

Table 2: Traditional Lessons Modified for the ALC

| Traditional: Lecture-Type Version (What the lesson would have looked like in traditional form, in a traditional classroom) | Active Learning Version: Lessons Used in the ALC Winter 2017 | Comments |
|---|---|---|
| Elements of a short story: PowerPoint, Lecture and discussion with examples of elements of a short story: characters, plot, setting, point of view, theme and symbols | Fiction kits -in five small bags I gathered items to represent the elements of a short story (or novel): a string with beads to represent a plot line with the crisis and climax, a di to indicate the type of narrator, a message in a bottle for the theme, indications for flat or round, static or dynamic characters, a map for setting and a glass bead for symbols, etc. | I was able to reuse these kits for other short stories and with other classes. They make the theory concrete and provide a vehicle for the students to interact with each other -"make thinking visible" |
| Plot Lines: PowerPoint, lecture with examples and discussion on elements of the plot in a short story: conflict, chronological order, exposition, crises, climax and resolution. | Plot exercise -I listed the events in a short story in the order they appeared in the story. -This story had a lot of flashbacks and repetition. -I printed the list and cut the sentences into strips (but still attached) and had the students put them in chronological order. -Each group used the whiteboards to make a diagram of the plot of the short story | -each group had a different way of indicating the plot, they may have copied some organizational patterns from other teams if not sure how to begin (this is okay) -"make thinking visible" |
| Protein Synthesis: Lecture type delivery of theory on protein synthesis starting with the DNA molecule in the nucleus. The teacher explains the transcription into messenger RNA, the protein synthesis taking place in the rough endoplasmic reticulum, the modification and packaging of the protein into the Golgi apparatus and final destination of the protein. | Role playing: Each team was giving a protein to synthesize starting with the DNA molecule in the nucleus. Four different destinations were possible. Step 1: Research in their book or internet on the protein synthesis and pathway to its final destination. Step 2: Discussion and illustration of concepts on the whiteboard. Step 3: The students develop a skit to illustrate the protein synthesis and present it to the other teams. | Activity performed on the first day of course. Excellent way to review content seen two sessions ago. Creativity and humor used to illustrate a scientific concept. |
| Cellular Respiration: Lecture on cellular respiration and exam to evaluate their understanding on the subject. | Problem Solving: Exercice d'intégration sur la respiration cellulaire Résolutions de différents problèmes portant sur la respiration cellulaire. | Cet exercice peut se faire individuellement en classe. Cependant, l'avantage de le faire dans la classe d'apprentissage actif est l'interaction entre les étudiants pour arriver à résoudre les problèmes. |

| | | |
|---|--|---|
| <p>Analyse d'un poème : Le prof livre sa compréhension du poème et les élèves n'émettent pas d'hypothèses d'analyse de contenu. Ils transcrivent ce que le prof dit et se disent qu'ils devront réaménager leurs notes de cours personnelles afin de « livrer » une dissertation au prof. Le sens de l'œuvre n'est pas construit par les élèves : il est énoncé par le prof, que les élèves comprennent ou non, qu'ils soient d'accord ou non.</p> | <p>Construire le sens émanant d'un poème : <u>Étape 1 (environ 20 minutes)</u> En équipes, les élèves discutent du poème qu'ils ont préalablement lu à la maison. Ils confrontent leur compréhension de l'oeuvre, puis en arrivent à une compréhension commune. Ils notent les principaux éléments retenus sur les tableaux blancs. <u>Étape 2 (environ 20 minutes)</u> L'enseignante dirige un échange de groupe au cours duquel chaque équipe présente sa compréhension du poème. Après chaque présentation, le reste du groupe doit évaluer la pertinence de ce que chaque équipe a présenté. <u>Étape 3 (environ 10 minutes)</u> En équipes, les élèves discutent de ce qu'ils décident de retenir et émettent des hypothèses sur le type d'idées qu'il faudra éventuellement formuler avant de penser à élaborer un plan de rédaction (lequel permettra une autre activité de ce genre).</p> | <ul style="list-style-type: none"> - L'enseignante circule constamment et, au besoin, oriente les discussions (dans le cas, par exemple, où une équipe s'éloignerait vraiment du sens du poème, malgré toute la bonne volonté des membres de l'équipe). - Cette activité a pour avantage de permettre aux élèves de vraiment comprendre l'oeuvre. Il s'exercent à réfléchir et cela développe leur autonomie intellectuelle. Le prof ne dit jamais ce qu'il a lui-même compris en lisant le poème. - Les tableaux blancs sont vraiment utiles : ils remplacent un peu les présentations PowerPoint. - La compréhension du poème n'égale pas celle des experts; cependant, les élèves maîtrisent bien les poèmes ainsi travaillés, puisqu'ils ont eux-mêmes construit le sens qu'ils ont donné à l'oeuvre. Le prof ne fait que s'assurer qu'ils ne s'égarent pas. - Oui, ils s'investissent vraiment dans l'activité :) |
| <p>Individual questionnaire on the respiratory system.</p> | <p>Mini cases that invite students to analyse a set of facts or circumstances: One case is presented per working table. Each team has a different color marker to write their interpretations of the situation on the white boards. After 10 minutes, they change place WITH THEIR MARKER and try to solve the next mini case. They can add or modify the information already available on the board. When every team has resolved all cases, there is a class debriefing to help everyone understand the implications of their solutions, as related to the content of the discipline. (You could tell which team had written what by the ink colour.)</p> | <p>It is very important that each team works without instructor interference.</p> <p>The students fully participate because they want to impress their classmates.</p> <p>Some cases were harder to resolve.</p> <p>You need different coloured whiteboard markers for each team.</p> |
| <p>Individual questionnaire on the nervous system.</p> | <p>Twelve questions given to each team composed of five students: Each student in the team answers two questions. Then, each student presents the question and his answer. The other students on the team decide if they agree with the answer or if they should clarify the answer. Toward the end of class, the teacher addresses the questions that caused more difficulties.</p> | <p>Allows an opportunity for all members of the team to participate fully.</p> |

| | | |
|---|--|---|
| <p>Course lecture on the prevention of infections.</p> | <p>Ateliers en classe inversée: Théorie rendue disponible sur Moodle la semaine précédant le cours. L'étudiant a des lectures ciblées à faire et parfois, il doit visualiser un court vidéo pour ensuite répondre à quelques questions. Le billet d'entrée en classe est de me montrer que le boulot est fait (avoir répondu au questionnaire). En classe, on contextualise la matière à l'aide de cas cliniques. Ils travaillent en équipe de 3 ou 4 et je réponds à leurs questions au fur et à mesure. Quand je constate qu'un concept est moins bien compris, j'arrête tout le monde et j'explique celui-ci.</p> | <p>L'avantage est qu'ils se préparent mieux avant mes cours. Je passe du temps à expliquer les concepts plus compliqués au lieu de devoir <u>tout</u> expliquer.</p> <p>Cette façon de faire me permet aussi de m'adapter au rythme de l'élève plutôt que ce soit lui qui ait à s'adapter au rythme de la classe.</p> <p>Les élèves ne voient pas le temps passer!</p> |
| <p>Marketing Theory Lecture</p> | <p>APP en marketing sur 3 mises en situation durant la session. Il y avait 3 équipes de 6 personnes. Ils ont fait la phase 1 seulement de l'APP régulier.</p> | <p>J'ai pas eu besoin d'expliquer et d'intervenir car dans chacune des équipes, une personne avait déjà fait de l'APP avec moi en ressources humaines.</p> <p>Tous ont bien participé et ils ont trouvé les éléments sans avoir vu la théorie. Ils m'ont surpris par leur capacité à analyser et trouver des solutions pour une situation.</p> <p>Dans la prochaine année, je vais incorporer les 3 phases de l'APP en ressources humaines car je suis maintenant prête. Le cours aura aucune présentation par moi de la théorie.</p> |

**Language Difficulties and Possible Interventions:
Lecture**

Objectif : Présenter un trouble langagier et proposer des pistes d'intervention.

Mise en contexte : Dans le programme de Techniques d'éducation à l'enfance dans le cadre du cours « Les enjeux de la communication » donné à la 4^e session. J'ai formé les équipes de 2 au hasard et suite à une discussion, les équipes ont fait le choix de leur sujet qui était la dysphasie, le bégaiement et la surdité. Un plan de travail était présenté et expliqué afin que toutes aient la même compréhension de l'activité. Il est important de mentionner que cette activité n'était pas évaluée. Cette expérimentation s'est effectuée en 4 étapes.

1^{re} étape (en classe)

Les équipes ont amorcé une recherche sur leur sujet, elles devaient venir valider leurs sources avant de poursuivre le travail. Elles ont travaillé sur ce projet pendant 2 périodes.

2^e étape (en salle d'apprentissage actif) +/- 20 minutes

Chaque équipe a inscrit au tableau le sujet de leur recherche et a divisé ce dernier en deux. Dans une colonne, elle y indiquait « ce que je connais » et dans l'autre colonne, « mes questions ».

Les équipes devaient effectuer une rotation et inscrire leurs connaissances et leurs questions sur les 2 sujets sur lesquels elles n'avaient pas travaillé.

3^e étape 1h40

Les étudiante reviennent à leur tableau initial, et doivent enrichir et compléter leur recherche afin de s'assurer que les réponses aux questions de leurs pairs se retrouvent dans leur et que les éléments dans la colonne connaissances sont exacts. À cette étape on aperçoit les équipe en actions, une est sur son portable et l'autre au tableau afin d'effacer les éléments répondus au fur et à mesure.

4^e étape

Chaque équipe présente leur travail bonifié à leurs pairs.

Rétroaction des étudiantes :

- Elles trouvaient les sujets intéressants
- Le fait d'avoir les questionnements de leurs pairs, leur a permis d'aller plus loin dans leur recherche
- Elles disent avoir appris énormément sur les troubles de langage et surtout elles disent maîtriser particulièrement bien le sujet sur lequel elles ont travaillé.
- Elles ont beaucoup aimé la dynamique que crée la salle d'apprentissage actif
- Elles en redemandent

Rétroaction de l'enseignante

- Les étudiantes étaient motivées et avaient à cœur de faire un travail de qualité afin de bien répondre aux questionnements de leurs pairs.
- Mon rôle en était un d'encadrement, je circulais afin de répondre à leurs questions.
- Le résultat était riche
- L'expérience est définitivement à refaire

Examples of Active Learning Activities and Their Attributes

As part of my master's research on Virtual Team Teaching I read and thought a lot about collaboration. Active learning does not *necessarily* mean collaboration; students can and should work individually and independently as part of their active learning experience. However, if you do not want students to interact, it is probably a bad idea to sit them down at tables that are designed to be conducive to conversation. The ALC is set up to support social interaction, so it makes sense to use at least some, or even most of the time you have in the active learning classroom supporting collaborative learning activities. According to research, here are three ways teachers support collaboration: establish and maintain common ground, support students in making contributions, and act as guides in the background (Staples, 2007). The following paragraphs will look at each of these actions in more detail.

Establish and Maintain Common Ground

In learning theory, common ground refers to shared understanding of terms, information and ideas. When we collaborate we need to share some common ground so we can work together on the same thing; without common ground it is difficult to get anything done. In practical terms for the classroom this usually means shared understanding of terminology and shared knowledge of the specific content to be used in the activity. For a concrete example, if my Literature students are going to discuss the theme in a twelve page short story during Wednesday's class in the ALC, all of the students must have read the short story before class begins, and when they get to class, they need to agree on what the term "theme" means so they can look for it. It also helps if they share some procedural knowledge about how to analyse a work of fiction: they need to consider the historical and cultural context of the work; the advantages of knowing something about the author and their work; the elements of short stories such as plot, character, setting, and point of view, and they should also be aware of various literary and rhetorical devices such as imagery and the use of symbols. As the teacher, it is my job to find ways to make sure everyone is prepared before they arrive in the ALC, and then to support the ongoing creation of common ground as the activity proceeds. An example of helping make sure the students arrive with the shared reading of the short story is the use of the "flipped" classroom strategy where students interact with course content before class hours so they can use their time together in the classroom with their peers and the teacher to its maximum potential. For my literature courses, students know they almost always have two things due online for Sunday midnight: the preparation for the week arriving, and the individual work that serves as an assessment of their learning for the material explored in the previous week. In concrete terms, this meant that they need to do a quiz on Moodle that usually leads them through the reading of the work to be discussed in the upcoming week. Often the literary piece was divided up in the quiz and there were questions on each section they needed to answer as they read. These quizzes usually take less than twenty minutes, including the reading of the text, and students like the immediate feedback they get on their responses. The quizzes are worth ten to twenty percent of the term, depending on the course, and I often drop the two lowest marks. They do about twelve of these so they are only worth about one or two percent each, so they are very low stakes -which is deliberate, this is not an assessment of their final abilities, it is an assessment of their ability to read material on time in order to participate in the classroom experience and all of the learning that goes with it. Skipping or doing poorly on one of these quizzes is of little consequence. Skipping all of them drops your mark by ten or twenty percent, and that is usually enough to motivate students to participate. So this is part of what I do as a teacher using the ALC, I design learning activities outside of the classroom, or in my other classroom that has a more traditional set-up, so that when we are in the ALC students share some common ground and are ready to work together to solve a question or a problem. Once we are all in the ALC, there are still opportunities for establishing common ground. Students may need to find shared definitions for terms before beginning, or you can have them do some research to find information or chose procedures that they need for the learning activity.

Support Students in Making Contributions

In the ALC, teachers strive to create an environment where students are encouraged to offer contributions that might be perceived as wrong, odd, alternative, surprising, original, or creative. This is one way they support students in making contributions. Teachers and peers work on listening to what students are saying, really hearing and understanding and building on their contribution. This is the key difference

between sharing and collaborating; in sharing everyone adds their bit; in collaboration we take the other person's bit and use it to help the group move forward.

Act as Guides in the Background

Finally, the third task for teachers in the ALC was to act as guides in the background. You need to be a bit of a magician and make yourself disappear. It helps if we can be aware of ego; let go of our expert status, avoid imposition of our opinions and ideas, and provide students with the opportunity to have their own “wonderful ideas” (Duckworth, 2009) It is clear in many of the examples listed in Table 2 that the teachers are moving around the ALC, checking on groups and individuals, making sure they are working and on track. This does not include giving the right answers. The role of background guide often takes the form of a question answered or as questions posed. It might also be a reminder about previous learning, or a hint about where the team might find some helpful information. Teachers have the advantage of experience teaching in their discipline, they know where the learning “bottlenecks” are, and they know how to guide students through them. The ALC is a perfect place for zeroing in on these learning trouble spots and supporting students through them with the support of their peers and the teacher/guide.

Conclusion

I had the idea of making a table showing the activities listed in Table 2 in relation with the three teacher behaviours that support collaboration discussed above. When I thought about each of the activities, they all seem to include these three kinds of teacher behaviours. I was going to take out the table, because a table where everything is checked off is a bit like a poem with everything highlighted; it adds no new insights. But then I decided that it was an effective graphic reminder of the success of our activities!

Table 3: Teacher Behaviours that Support Collaboration in the ALC Lessons

| Activity Done in the ALC, Winter 2017 | Create and Maintain Common Ground | Support Contributions | Act as Guides in the Background |
|--|-----------------------------------|-----------------------|---------------------------------|
| Literature: Fiction kits | ✓ | ✓ | ✓ |
| Literature: Plot exercise | ✓ | ✓ | ✓ |
| Human Biology: Role playing protein synthesis. | ✓ | ✓ | ✓ |
| French Literature: Constructing the meaning of a given poem | ✓ | ✓ | ✓ |
| Human Biology: Mini Case Studies on the Respiratory System | ✓ | ✓ | ✓ |
| Human Biology: Group Questions on the Nervous System | ✓ | ✓ | ✓ |

| | | | |
|--|---|---|---|
| Nursing: Infection Prevention Clinical Cases | ✓ | ✓ | ✓ |
| Administration: Marketing Case Studies | ✓ | ✓ | ✓ |
| Early Childhood Education: Language Difficulties and Possible Interventions, Prior Knowledge and Questions | ✓ | ✓ | ✓ |

Our Active Learning Fellows, or “Les compagnons de l'apprentissage actif” as we are known in our mostly French cegep, have learned a lot during the first term in Cegep de Sept-Îles’ new ALC. We appreciate the support of the college in creating the room for teachers to use, and look forward to increasing to gaining more experience as practitioners of active learning in this supportive setting. Students appreciated their learning experiences in the space and many more teachers are interested in trying out the ALC. The college is looking into the possibility of a high-tech ALC within the next two years; that will allow us time to master the pedagogy and be ready to take on some challenging technology to offer our students ever more interesting learning experiences.

References

- Duckworth, E. R. (2009). *The having of wonderful ideas and other essays on teaching and learning*. New York: Teachers College, Columbia University.
- Finkelstein, A. (2015, February 06). How can I teach in an Active Learning Classroom at McGill? Retrieved May 22, 2017, from <https://teachingblog.mcgill.ca/2013/05/01/how-can-i-teach-in-an-active-learning-classroom-at-mcgill/>
- Finkelstein, A., Tovar, M., Ferris, J., & Weston, C. (2010, December 10). *Designing and Supporting Active Learning Classrooms* [Seminar 14A]. University of McGill, Montreal. <http://www.educause.edu/sites/default/files/library/presentations/E10/SEM14A/Finkelstein-Designing-Supporting-Evaluating-ALCs.pdf>
- Massachusetts Institute of Technology. (2005). TEAL: Technology Enhanced Active Learning. Retrieved May 22, 2017, from <http://web.mit.edu/edtech/casestudies/teal.html>
- North Carolina State University. (2011). SCALE-UP Site. Retrieved May 22, 2017, from <http://scaleup.ncsu.edu/>
- Staples, M. (2007). Supporting Whole-class Collaborative Inquiry in a Secondary Mathematics Classroom. *Cognition and Instruction*, 25(2-3), 161-217.
doi:10.1080/07370000701301125
- Wikipedia. (2016, August 24). SCALE-UP. Retrieved May 22, 2017, from <https://en.wikipedia.org/wiki/SCALE-UP>