Adopting a student-led pedagogic approach within Higher Education: The reflections of an early career academic

Chris Rowley a,b, Janis Fook a and Jonathan Glazzard a

a International Centre for Higher Education Educational Research, Leeds Trinity University, Leeds, United Kingdom;
b School of Health and Social Sciences, Leeds Trinity University, Leeds, United Kingdom

The current paper presents a reflective account of the adoption of a student-led pedagogic approach, based upon the first author’s experiences of working within a new academic institution. Carl Rogers’ writings around student-centred learning and the role of the facilitator provide the theoretical underpinning for the reflections put forward, and contextual information regarding the institution’s learning and teaching strategy, and the first author’s teaching background are also provided. Observations and reflections relating to ‘power’ within teaching and learning, and the challenges (and successes) encountered when adopting the role of a ‘facilitator of learning’ are considered from a critical standpoint. The paper closes with some key questions and considerations surrounding the first author’s ongoing exploration of this innovative pedagogic approach.

Keywords: student-led inquiry; pedagogy; higher education, early career academic, sport psychology.

Introduction

In the ever-changing landscape of pedagogic research, there is a current emphasis on the apparent benefits of student-led inquiry (SLI) as part of higher education curriculum delivery (Ashwin et al., 2015). Ashwin et al. (2015) suggest that SLI facilitates greater engagement and allows students to take responsibility for their learning. The roots of this contemporary approach can be traced back to the seminal workings of Carl Rogers (1969) surrounding democratic education, and the facilitative role that academics might play in
supporting person-centred learning. Rogers (1980, 1989) highlighted the challenges associated with this pedagogic approach, acknowledging a shift of power and control from the teacher, to the whole group of learners, thereby impacting upon students, teachers, and administrators of education. In light of this, the current paper presents a reflective account of the adoption of a student-led approach to teaching, based upon the first author’s experiences of working within a new academic institution. In doing so, issues relating to ‘power’ within teaching and learning, and some of the issues encountered when adopting the role of a ‘facilitator of learning’ (Rogers, 1969) are highlighted. To better contextualise the reflections that follow, several background issues will first be outlined including: the theoretical underpinning for the pedagogical approach; the first author’s experience and teaching background; and the module within which this approach was initially adopted.

**Theoretical Underpinning**

Teaching within higher education has undergone a ‘pedagogical shift’ in recent years (McCabe & O’Connor, 2014) as institutions seek to improve student autonomy, motivation, and achievement. Autonomy permits students choice and ownership of their learning, and as educators, we seek to provide learning experiences which intrinsically motivate our students. Achievement can be considered more broadly; in that it is not limited to academic achievement alone as we are also interested in how pedagogical approaches develop students’ confidence, communication skills, and sense of self. Alternatives to traditional didactic approaches have acquired growing recognition in the literature (Meyer & Land, 2005; Moulding, 2010; Struyven, Dochy, & Janssens, 2010), supporting the sector in finding ways of engaging a more academically diverse student body (Biggs, 2003; Hardie, 2007). SLI is an approach to learning which is essentially
student-centred and instructor guided (Justice, Rice, Roy, Hudspith, & Jenkins, 2009), and although it is variously defined, common themes include: discovery learning; creating one’s own understanding; and building on prior knowledge (Tangney, 2014). Through a process of inquiry, students learn to master concepts and develop skills through active engagement, resulting in deeper learning than traditional didactic approaches (Abdal-Haqq, 1998; Justice et al., 2009).

Early scholars such as John Dewey, Jean Piaget, and Lev Vygotsky all emphasised the importance of active, experiential learning, representing some of the earliest workings around student-centred learning. Vygotsky advocated a socio-cultural perspective on learning and development, believing that collaboration and dialogue play a critical role in advancing learning, and emphasising the role of the educator as a facilitator of learning rather than a knowledge-transmitter. Whilst we recognise that other theorists contributed to the development of student-centred approaches however, this paper focuses primarily on the aforementioned work of Carl Rogers and his guidelines for the facilitation of learning. Rogers (1978), suggested that a high priority in education was to help individuals acquire the learning, information, and personal growth that would enable them to deal more constructively with ‘the real world’. Rogers depicted teaching as being a ‘vastly overrated function’ with only the ‘facilitation of learning … considered as important’ (Rogers & Lyon, 2013, p. 17), suggesting that such an approach encouraged a reliance on process rather than upon static knowledge (Rogers, 1969).

Rogers (1969) provided guidelines for the facilitation of learning, including: helping to set the climate of the class experience and clarifying the goals of individuals as well as the group; relying on students to identify purposes which have meaning for them (as motivation for significant learning), but then making accessible the widest possible range of resources, including the facilitator themselves as a flexible resource;
factoring in both intellectual and emotional aspects of learning; and sharing his/her own feelings, to become a participant learner (also recognising his/her own limitations). Rogers (1969) suggested that successfully adopting these principles could enable significant, meaningful, or experiential learning to occur, characterised by ‘a quality of personal involvement’, with self-initiation and self-evaluation on the learner’s part being viewed as critical requirements for ‘pervasive’ learning. Rogers (1989) also stated that the person-centred mode of education rested upon the precondition that the ‘leader’ experiences an essential trust in the capacity of others to think and learn for themselves. However, Rogers (1980, 1989) also recognised that the person-centred approach posed a political threat to existing orthodoxy, acknowledging a shift of power and control from the teacher to the whole group of learners, including the leader themselves, functioning as a learner-facilitator. Indeed, Rogers’ (1980, 1989) discussion regarding the ‘politics of power’ within education is arguably as pertinent today as it was then, with academics being encouraged to explore the possibilities afforded by SLI as an alternative to more ‘traditional’ methods of teaching (McCabe & O’Connor, 2014). A student-centred approach is often depicted as being pedagogically superior to teacher-centred approaches (Akerlind, 2003; Barnett, 2008; Blackie, Case, & Jawitz, 2010), however, a philosophical and pedagogical shift is required for successful implementation (Attard, Di Lorio, Geven, & Santa, 2010; Elen, Clarebout, Leonard, & Lowyck, 2007; McCabe & O’Connor, 2014; Walsh, 2005). Transferring power to students and away from educators requires teachers to recognise that students can become experts in their own learning. Constructive interaction between the learner and the educator is central to the philosophy of student-centred learning (Attard et al., 2010), where students are empowered to take ownership of their own learning by engaging individually and collectively in meaningful tasks, resulting in the development of skills such as critical thinking, problem solving, and
independent learning (Light & Cox, 2005; O’Neill & McMahon, 2005).

**Institutional Context**

Although interest in higher education pedagogy is global, the wider policy context that shapes higher education in England has meant that institutions are now increasingly (re-)focusing on teaching practices. The widening participation agenda has resulted in a richly diverse student body and consequently this has led to a growing interest in inclusive pedagogy. The introduction of the Teaching Excellence Framework in England (Department for Business, Innovation & Skills, 2015) has elevated the status of teaching within the higher education sector, and the employability agenda has forced institutions to consider ways in which higher education courses prepare students for the world of work. Given this climate in England, there is an urgent need for institutions to focus on higher education pedagogy as a route to providing students with an excellent student experience.

Leeds Trinity University began in 2012, formed of several Catholic Teachers Colleges which had been in existence for nearly 50 years. The Learning, Teaching and Assessment Strategy (LTAS) was ratified in 2015, and alongside the university’s strategic plan, it aims to capture and capitalise upon the already established expertise and reputation for excellent teaching. The LTAS revolves around three key principles of learning which are: ‘applied, collaborative and engaged’ (ACE). Students are encouraged to take an active role in both shaping and being responsible for their own learning in a collaborative way with academic staff, with student-led learning approaches being viewed as central to the strategy. One challenge, however, has been that students have not necessarily experienced student-centred learning previously, and may have very different expectations about how their teaching should be delivered. These challenges are
akin to what Rogers (1980, 1989) labelled the ‘politics of power’ within education, and from a personal standpoint, I (Chris Rowley) was initially concerned about how the LTAS would reframe and potentially challenge my own teaching practices.

**My Academic Background**

It was Rogers’ (1969) own belief that ‘tomorrow’s educators’ must acknowledge the stance they take in regards to life, encompassing one’s own values, and from where such beliefs are derived. When I consider my own values and beliefs in relation to teaching, I have always advocated the role which SLI could play, but as an early career academic – completing my fourth year teaching full time in Higher Education at the time of writing – the issue had always been that I did not really know what effective SLI would look like as part of my own modular delivery. Indeed as part of a recent publication, I strongly advocated the Rogerian principles of education (Rowley, 2016) in relation to coach education within the sporting domain, but that chapter subsequently left me to challenge some of the fundamental principles of my own teaching within Higher Education. On the one hand, I was highlighting the importance of empowering learners and adopting a more facilitative role within educational practice, but I was struggling to implement this in any tangible way with my own students. This was partly because I struggled to foresee what a truly student-led session would look like. How could control and direction be maintained? How could learning and development be assured? What role would I play if the students themselves assumed control?

My initial curiosities surrounding what SLI would look like, arose through my PhD studies, which first introduced me to the work of Rogers. Aspects of my own education had certainly encompassed elements of SLI, primarily through the delivery of seminars and practicals, but these courses had predominantly relied upon the transfer of knowledge from lecturer to student using a traditional lecture format. Consequently, my
own teaching style tended to mirror my own student experience. As Kahn (2009) remarks however, present-day lecturers are expected both to employ a wide array of teaching practices and to take on significant responsibility for the selection of these practices (although individual agency to adopt such practices for early career academics is ultimately affected by social, cultural, and structural factors). In my case, the challenges inherent in implementing the LTAS made me reflect on the effective elements of my practice, and highlighted areas I needed to develop. Accordingly, I wanted to increase the proportion of SLI that was apparent within my teaching. As the following section will detail, I was fortuitously tasked with leading a module which lent itself to the adoption of SLI as the predominant mode of delivery, representing an opportunity to revolutionise my pedagogic approach.

**Modular Context**

The module in question was a first-year undergraduate ‘Introduction to Sport and Exercise Psychology’ module, with 25 students actively enrolled on it at the time of delivery (from four differing programmes). The cohort in question were comprised of 10 females and 15 males, and were generally representative of traditional higher education students in terms of age (with the majority being around 18 years old at the time), and with 11 being from A-Level backgrounds, with the remainder generally being from BTEC backgrounds. In terms of structure, the module adopted what I believed to be a rather unique approach to assessment and delivery, with weekly, four-hour workshops being scheduled to help students work towards the completion of two group-based assessments. The format in which groups submitted their assessment was to be negotiated between myself and the respective members, but regardless of whether students chose to submit a collective report or a presentation, they were all required to engage with problem-based learning by addressing vignette-based scenarios for
hypothetical sport psychology clients. Groups could choose from a range of possible scenarios and I had worked to ensure that each scenario could be interpreted from different theoretical standpoints, believing that every group would be able to make links between their ‘client’ and the topic that we were discussing in that week’s workshop (e.g. motivation, confidence, anxiety, etc.). The associated assignment criteria outlined the need for groups to make justified links to relevant theoretical literature, before offering a research-supported intervention plan which they would look to utilise. Online forums were also set up through the module’s electronic learning environment, so that ideas, resources, draft assignments, etc. could be shared throughout the module.

Having prepared the assessment scenarios in advance of the start of the module, I was confident that I had developed broad but contextually reflective scenarios, which mirrored some of the day-to-day challenges which practitioners may encounter. As the start of the semester approached, however, I still had concerns as to how best to deliver the module, given that the weekly workshops differed considerably in format to the traditional lecture and seminar modular approach that I had worked towards previously. The defining features of the module seemingly lent themselves to the institutional LTAS and in that respect, I decided to take the bold step of focusing the entire module on student collaboration within their assessment groups. Students would sit with their fellow group members on a week-to-week basis, with the workshops allowing time for an open discussion at the start of class, after which I would deliver a ‘mini-lecture’ (lasting around 45 minutes) which aimed to provide an overview of relevant theories and research-supported intervention strategies relating to a specific topic. In contrast to my previous approach, I had decided that the content which I would deliver in these workshops would only offer an outline of the theories covered, meaning that the students themselves would need to conduct considerable wider reading to develop sufficient depth of knowledge and
understanding. In light of this, I was on the verge of experiencing that same shift in power of which Rogers (1980, 1989) had spoken previously, anticipating that this change in dynamic would produce a number of issues of practice as the semester progressed. Accordingly, the remainder of this paper serves to outline some key reflections from my first modular delivery, encompassing my own personal thoughts and opinions, as well as some of the views offered by students as part of the module evaluation process.

The insights offered here are akin to the reflective definitions originally proposed by Schön (1983), who remarked on the complexity of the reflective process, proposing reflection-in-action as the phenomenon of ‘thinking on your feet’ and ‘learning by doing’. In contrast, reflection-on-action pertains to a more distal process in which past experiences are analysed so that future practice might be adjusted where appropriate (Schön, 1983). Aspects of the discussion to follow outline the moment-to-moment challenges of adopting a personally revolutionary pedagogic approach, whereas other elements represent developing ideas and enduring questions about effective teaching practice and, as such, are founded on reflection-on-action as a critical process. Furthermore, and in accordance with the theoretical underpinning provided by Rogers’ (1980, 1989), these reflections can also be associated with two main themes, with the first being concerned with issues surrounding the transfer of power in teaching and learning, and the second focusing on my emerging ideas and contemplations as to what the effective facilitation of learning may entail.

Results and Discussion

*Unchartered Territory: Transferring ‘Power’ to the Students*

For Rogers, trust in one’s students represents a fundamental ideology of the student-
centred approach to learning. Rogers and Freiberg’s (1994) ‘Freedom to Learn’ emphasised the importance of learners as knowledge creators (‘citizens’) as opposed to visiting consumers of the learning environment (‘tourists’). Accordingly, there is a strong belief that students have the potential to make appropriate choices to maximise their potential (Brockett, 1997; Freire, 1974; Mezirow, 2009; Rogers & Freiberg, 1994) and that unconditional positive regard and the minimisation of power differentials are critical to effective student learning (Gage & Berliner, 1991; Rogers & Freiberg, 1994).

Furthermore, Rogers (1989) suggested that traditional education and the person-centred approach which he advocated represented opposite ends of a continuum, suggesting that traditional methods were rarely defended or suggested as being the best system for education, and that instead they are simply accepted as being the inevitable system. This adoption of the inevitable system had featured heavily throughout my early career, and it was only upon arriving at my current institution that I began to question the extent to which I had previously regarded students as ‘tourists’ of their education. There had never been a conscious issue regarding the trust I was willing to place in them, but in order to adopt a truly student-led pedagogic approach within the module in question, I was also aware that I would have foster a new type of learning environment where the responsibility for learning was shared equally.

Within the first week, I had adopted my usual approach of outlining the aims and objectives of the module, providing the relevant details relating to the assessments and associated marking criteria. Given that I had taught these students previously, I spent some additional time providing an overview of how the teaching in this module was going to differ to that which I had delivered before. I also stressed the importance of them taking an active role in their own learning, as this would ensure that they developed a sufficient depth of knowledge and understanding. Encouragingly, two groups of students
subsequently brought related textbooks with them into the second workshop, behaviour I had not seen from the same students in previous modules. Additionally, two further groups requested to go to the library following the completion of the second mini-lecture, which suggested that some members of the class understood the requirement for them to fully engage with this module and pass their corresponding assignments.

For some groups, however, this transfer of power provided an opportunity for students to leave workshops early, and this was concerning as I was aware of the amount of work that would be needed for students to succeed overall. Selected groups would often request to go to the library during the timetabled workshop, and in keeping with the ethos of SLI, I would allow them to do so, in spite of me being unsure whether their request was a genuine one or not. This potentially represented a betrayal of the trust I had placed in the students, but I personally felt it was essential that all groups were treated the same throughout the delivery of this module, irrespective of my opinions on their assessment progress, and their general punctuality throughout sessions. For other students, the lack of structure in the earlier workshops seemed to produce some apparent confusion, with individuals seemingly unsure what it was they were meant to be doing. It was almost as if they were waiting for me to continue to lead the class once the mini-lecture had concluded. In all reality though, I too was uncertain as to what I expected to see from them at times. To my mind, the role of the facilitator was to respond to student needs and allow them the opportunity to lead the learning process, and so I felt I needed to allow all groups sufficient time to gather momentum working on their respective assessments, as opposed to being too keen to rush in and offer guidance. I was concerned by the progress that some groups seemed to be making however, and so I began to consider how I could enhance my role as facilitator, to effectively respond to the needs of individual students, groups, and ultimately the class as a whole.
Learning by Doing: Adopting a Facilitative Role

As is often the case, I generally found myself planning and preparing teaching materials a week in advance for the module in question once the semester had started. In that respect, it would be inappropriate for me to in any way suggest that I strictly adhered to the guidelines for the facilitation of learning suggested by Rogers (1969). In reality, I just tried to focus on the apparent needs of individual groups, with the ultimate aim being to ensure they were all successful in their attempts to collectively pass the module assessments. It has only been since the completion of the module that I have been able to reflect-on-action (Schön, 1983) and consider the extent to which my approach was (or was not) in keeping with Rogers’ (1969) guidelines.

As highlighted previously, I had made a conscious effort at the start of the module to clarify what this SLI approach would demand from the students collectively. The timing of this was seemingly significant, because in keeping with Rogers’ (1969) suggestions, it helped ensure that the initial climate, and purpose of the group in general, was well defined. From that point onwards, however, the requirement for me to be a ‘flexible resource’ (Rogers, 1969) for the group became increasingly apparent, particularly as groups progressed at different rates overall. For some of the seemingly ‘stronger’ groups, the issue seemed to be that they were perhaps looking to read between the lines of their scenarios, and were at risk of underemphasising the links to theories and interventions associated with the module learning outcomes and corresponding marking criteria. In contrast, factions were beginning to emerge within some groups by as early as the third workshop, based on the punctuality of group members and a perceived lack of reciprocated effort in contributing to the assessment task. Rogers (1969) suggested that facilitation required the ‘leader’ to remain alert to the expressions indicative of deep or strong feelings, and these discussions had seemingly represented such instances within
the context of this module. In an attempt to diffuse any apparent tensions and provide reassurance, I talked in detail with these particular groups about how they could use the forums to evidence their contributions as individuals, and that any apparent lack of engagement on an individual basis would be scrutinised by the module teaching team on an ongoing basis. Indeed, it became increasingly apparent to me that the nature of this assignment, combined with the adoption of a student-led pedagogic approach, had created an increased impetus for students to attend on a frequent basis. In light of this, I was becoming increasingly concerned about how I could effectively support those students who were failing to do so.

On the one hand, students were attempting to police themselves which was pleasing to see, with some groups threatening to ‘kick people out’ if they continued to contribute little to their group’s collaborative effort. This was a sign that some students were taking responsibility for their learning and were motivated to succeed. I was very aware, however, that I needed to ensure all students were given the opportunity to complete the assignment as part of a group, and I was extremely reluctant to regulate who had, or had not, made a significant contribution. In keeping with this notion of shared power as part of an SLI approach, I allowed groups to make their own recommendations on who should contribute to the assessment tasks, with two groups subsequently removing members from their original allocations. Furthermore, I and the students decided that a small proportion of the marks that were initially available for ‘References and Presentation’ would instead be available as ‘Peer-Assessment’, as this would allow them to make a small contribution to the individual marks that each group member subsequently received. Rogers (1969) suggested that facilitation required the leader to recognise and accept their own limitations and, as such, I had chosen to effectively absolve myself of any outright decision-making power by allowing groups to remove
members if a consensus could be reached, or award a proportion of the overall marks available, based on their individual appraisals of their peers. Such decisions were almost exclusively based on student recommendations, rather than any imposition of my own thoughts or feelings (Rogers, 1969), and can be seen to be indicative of the increasingly participatory role I was looking to play as part of the general learning experience.

In terms of this delivery of the module, the issues outlined above did not develop any further because those students who were ‘kicked out’ of the groups ultimately continued to show a lack of engagement with the modular assessments. Looking ahead to future deliveries, however, the potential lack of engagement that some students may show, to my mind represents the most significant threat to the success of the SLI pedagogic approach within this module. Rogers (1969) himself acknowledged that the facilitator is always going to be reliant upon the desire of each student, as it is this that serves as the motivational force behind significant learning. With this in mind, the closing section of this paper will now look to offer the key observations and points for further reflection that I have noted throughout this first adoption of a facilitative role. In doing so, my concerns surrounding student engagement and the inclusive/exclusive nature of utilising such an approach will be considered from a critical standpoint.

Concluding Reflections

Rogers (1980, p.305) acknowledged that for many students, taking responsible control of their own learning can be daunting, given that:

‘Nothing in their background has prepared them to make choices, to make mistakes and live with the consequences, to endure the chaos of uncertainty as try to select directions in which they wish to move.’
Prior to the first week of this module, I had been somewhat concerned about the students’ abilities to proactively lead their own learning, simply because I had never asked them to assume such a role previously. As the teaching weeks progressed, however, I felt I was better able to respond to the students’ needs and to facilitate their learning in an approachable and beneficial manner. The discussions I held with individual groups seemed to be the most beneficial aspect of any given workshop, and subsequent forum posts and communications between group members seemed to reinforce this, with groups referring specifically to the guidance I had offered them and the conversations held in class. There was evidence that the students were becoming more skilled in applying psychological theory to cases and, thus, developing higher-order thinking skills.

Indeed, as for Rogers (1969) himself, my role as a facilitator enabled me to increasingly become a member of the respective groups, there to offer guidance and suggestions as opposed to instruction and leadership as I had done previously. Central to these discussions, and the institutional LTAS, was the role of formative assessment, as it enabled me to continually re-frame my facilitative role across the respective groups. As Pokorny (2016) suggests, formative assessment and feedback supports the learning process by providing students with developmental comments or opportunities for dialogue, which feeds forward to facilitate improvements in the summative assessment.

Indeed, one of my personal underpinning objectives for this module was to help students develop skills and qualities which would serve them well in their future careers, whether they be inside or outside the sport psychology profession. In light of this, the modular assessments and corresponding scenarios had been shaped in a professionally reflective manner, to try and help the students apply their knowledge and understanding in accordance with contextually relevant – albeit hypothetical – scenarios. Accordingly, my subsequent decision to adopt an SLI approach was driven by the desire to create an
opportunity for significant, meaningful, or experiential learning to occur (Rogers, 1969). Indeed, whilst continued experimentation and subsequent reflection and evaluation is required to further develop my personal approach, early indications from students would seemingly support Rogers’ (1969) suggestion that personal involvement and self-initiation on the learners’ part can allow for ‘pervasive’ learning to occur. The end-of-module evaluations from the students were exceptionally positive in this instance and, as a result, I was asked to discuss my pedagogic approach with peers as part of our institutional initiatives regarding the development of teaching and learning. Particular comments from the students relating to the structure of the module itself included that individual students ‘enjoyed the module and that the assignments were as though we were working with a client’ and that they liked ‘the way the assessments were designed by incorporating realistic scenarios to break down and interpret. I see this as a good insight into what a realistic job opportunity could be’. This was a potential indicator that the students were intrinsically motivated by the task. Furthermore, additional comments highlight the apparent impact of the pedagogic approach adopted, including one student remarking that they ‘find learning/teaching method effective and age appropriate (find other modules can be spoon fed)’ and another stating that the module ‘allowed ownership over work and freedom (within reason) for group work’. The increased ownership they had over their learning engendered a sense of motivation.

As a closing thought, however, the one standout issue I have perceived in adopting this approach to teaching is that by its very nature, it may potentially become an exclusive pedagogic approach, whereby students may find it hard to engage with the module if they have missed a number of workshops or have failed to contribute to their group’s ongoing progress. Attendance and attainment are always going to serve as logical measures of a module’s success, and in this instance, most students engaged with the delivery and
achieved grades that were indicative of the time and effort they invested into their own learning. A minority of students did not however, and I personally believe that this is something that needs to be monitored closely throughout coming deliveries of the module. More specifically there are concerns that SLI might inadvertently discriminate against students with low attendance. In this case the issue becomes one of how attendance can be encouraged in other ways, such as perhaps assessment of student collaboration. This reflection has resulted in further questions about whether academic credit might be awarded for the process of working in a team by assessing students’ collaborations in class. This might increase attendance, whilst also awarding students credit for how they collaborate with one another. Generally speaking, however, my personal reflections suggest that it is worth persisting with SLI within this module, as I personally continue to adapt and respond to the apparent needs of differing student groups throughout the coming academic years. Further research and personal reflection may seek to identify what types of students benefit most from an SLI, as well as how SLI can be complemented by other strategies, such as those which encourage consistent attendance. But, in a time when it might be argued that the massification of higher education has resulted in students with increasingly diverse needs coming to university, student-centred approaches provide students with inclusive learning and teaching opportunities which promote engagement, motivation, and achievement.
Reference List
http://www.esib.org/index.php/publications


http://www.fhs.mcmaster.ca/facdev