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Understanding the prospect of success in professional training: an ethnography into the assessment of problem-based learning

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ABSTRACT

One of the most fundamental innovations in higher education is the introduction of the method known as problem-based learning (PBL). While literature has largely focused on its learning goals and the transition from lectures to tutorials, little research has problematised why this is a successful methodology and what we consider as students' success. Drawing upon various ethnographic techniques, the authors analyse PBL as a field of expectations in light of Expectation-Value Theory. Beyond merely showing that PBL is a culturally constructed practice, the article elaborates on *how* students' expectations inform practices, performance and evaluation, which is important for assessing the successfulness of the method. By discussing students' expectations, dynamics and power relations, the present article is a contribution to the research addressing what has come to be known as the 'black box' of PBL.



KEYWORDS

Higher education; adult learning; problem-based learning; ethnography; group dynamics; expectancy theory

Introduction

Having little or no expectations in life can be a liberating attitude. Yet, educational attainment relies on students' confident hope that aspirations can be met. In this article, we explore the role of expectations in academic performance in higher education at the time of a methodological change. The new century opened with a new generation of problem-based learning (PBL) research, devoting increasing attention to group process. Unlike preceding authors, Hak and Maguire (2000) warned us about the great missing component of 40 years of research: the actual activities taking place in PBL tutorials. If optimism has been the signature trait of PBL supporters, that same optimism may have made us overlook social dynamics mediating processes of learning. Internal PBL functioning, we now understand, has become the 'black box' of the method (Hak and Maguire 2000; Koschmann and MacWhinney 2001; Bridges et al. 2012).

It is educational dynamics – with expectations as the main driver – that account for the ultimate goals of the method: self-learning and relational learning. However, mainstream research on PBL has focused on hypotheses of how peer discussion, cooperation and inductive thinking may contribute to an enhanced reasoning, and has recommended

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guidelines to transform traditional lectures into tutorials. While these aspects may account for top-down education policies, the prospect of academic success is embedded differently on the practice level. Only recently did practices begin to appear in the PBL scholarship, though the discussion has relied heavily on theoretical reflection alone (Holen 2000) or on students' self-report (Nieminen, Sauri, and Lonka 2006). Conversely, Barrett (2005, 2010, 2013) has extensively researched PBL through students' talk as a ground of learning. Similarly, Da Silva and Dennick (2010) explored cognitive process through the language being used. More recently, Bridges et al. (2012) analysed the construction of knowledge and negotiation of meaning in PBL tutorials, while Prosser and Sze (2014) closely examined students' interrelation and outcomes.

Worth is noting that the modest amount of contributions we are citing here does not respond solely to a careful selection of studies looking into the PBL 'black box'; it also reflects the worryingly scarce research on the subject, where even more worryingly, ethnographers have remained largely absent (with the exculpated exception of Remedios, Clarke, and Hawthorne (2008) and Cennamo et al. (2011), among few others). The advantage of using ethnography in education research lies in its ability to study social realities in their inherent settings, to bring culture into the fore, and to uncover actual behaviours. Since we were interested to explore academic success and cultural practices, ethnography was chosen as the most appropriate means to approach the research problem.

This article is a contribution in this vein, offering a bottom-up ethnographic gaze on academic success in PBL from its own internal dynamics, highlighting group interaction as a reflection of cultural expectations on the method. By focusing on the link between the way the method unfolds and the cultural setting in which it occurs, we investigated how student-student and tutor-student relations are shaped in light of assessment mechanisms that result in particular group dynamics. The article begins by recapitulating the basics of PBL as a methodology that has been proven to be fruitful in (mostly) English-speaking countries, a process that helped the method spread into other places. After presenting our methodology, we report on the findings of an ethnographic study illuminated by Symbolic Interactionism (Mead 2009; Blumer 2012) using Grounded Theory (Charmaz 2006; Corbin and Strauss 2008). We look at what dynamics, roles, cultural devices and power relations lie beneath the enactment of the PBL method, and the role of expectations, reasons and resources as mediators in performance and evaluation.

Data were obtained throughout one year of participant observation in PBL tutorials, complemented with non-conventional methods, semi-structured interviews and institutional documents, in a university-based nursing school in Chile. Building on these data, we aim to answer the question, to what extent do the students' expectations match the principles of PBL as a transformational methodology? We discuss how a methodological innovation such as PBL brings cultural traits of the setting to the fore, which uncovers a misbalance between the nature of this learning strategy and how academic success is understood. Lastly, we offer a perspective on practice-level realities that can best lead to a genuine transformation in education.

Background

The basics of PBL are too well known to merit much attention here, though they shall be recapitulated in order to understand the version of the method we studied. To integrate a

second concept into our framework, we then bring in the notion of expectation, for this is what lies beneath the relations and practices we explored through PBL group dynamics.

On the one hand, beginning in the 1960s, PBL came to adapt medical education to a progressive medical technologisation and the expansion of healthcare. Access to an ever-increasing scientific knowledge was behind a reform advocating for a method that gave cohesion to contents and prompted self-direction. The method of choice: case-solving. Soon after, the method appeared to stimulate student's motivation, developing cognitive processes in higher levels and facilitating knowledge retention and extrapolation (Neufeld and Barrows 1974). Mc Master University became the PBL think tank, attracting university educators from different countries to be trained.

Generally, the PBL method uses 'real-world' problems to develop critical thinking, problem-solving skills and social abilities (Duch 2001). Group interaction can encourage quality learning (Nieminen, Sauri, and Lonka 2006) due to cognitive effects that stimulate commitment and autonomy. Students work together on a problem – they organise their ideas, collect related information, define the nature of the problem, set learning goals and propose possible courses of action. The ultimate goal, however, is not to solve the problem itself, but to implement a didactic intention (Ayala, Messing, and Toro 2011). This implies that an important dimension of learning occurs in the social life of the tutorials. Tutorials' social life is not the mere 'background' where the action takes place. On the contrary, the importance of this social dimension is such, that learners need to work together for a period of time long enough to generate group dynamics, without which the value of PBL may be inferior to that of traditional lectures (Holen 2000).

Currently, PBL is widely used in higher education in the English-speaking world, and it has also been adopted in Latin America, especially in medicine and healthcare. While the method has been received with great optimism among tutors and students, internal relational dynamics of group learning remain an underexplored area.

On the other hand, according to Marzano (2007), the effect of teacher expectations on student performance might be one of the most widely studied aspects of classroom instruction (see, e.g. Brophy and Good 1970; Brophy 1981, 1983; Cooper and Good 1983; Ambady and Rosenthal 1992; Weinstein 2002). On the basis of the observer's bias, the result of an experiment can be altered, just as students' achievement can change on the basis of the teacher's expectations. Yet what this scholarship gives us is a one-sided view of expectations: those of the teachers, framed by the programmatic features of the system in which they work. Since the main purpose of PBL is to promote self-guidance, students' participation and judgment come to the fore, while teachers' expectations are not necessarily evident.

The views and prospects of students may, too, hinder or enhance their own academic performance by adjusting their potential to the tasks being given. In fact, in her – somewhat neglected – Expectancy-Value Theory of Education, Eccles (1983) sustains this can happen in at least three different ways: by pondering the value of the targeted learning task; by considering how much control they have over the outcome of the task; by taking into account their capability to succeed in having the task done (see also Eccles, Wigfield, and Schiefele 1998; Wigfield and Eccles 2000). These beliefs together structure a decision-making process that mediates one's choice, persistence and performance. Beliefs, and therefore expectations, are task-specific (Wigfield and Eccles 2000).

In her study of students' aspirations in a vocational school, and drawing closely on the classic sociological theory of Guiddens' (1984) and Merton's (1968), Stam (2017) introduces and conceptualises two key elements: reasons (or *why* one thinks an aspiration could be achieved) and resources (or *how* one thinks it could be achieved). While reasons refer to the explanation behind one's aspirations, resources refer to the knowledge and skills that are needed to succeed. In this way, individuals will tend to contemplate achievable, socially acceptable goals as they intend to change the social and material reality they are in (Merton 1968; Giddens 1984). In examining educational dynamics, integrating Stam's concepts to Expectancy-Value Theory can be helpful since they facilitate identifying students' reasoning behind the observed actions.

We argue that, while adopting a methodological innovation such as PBL can be of value, understanding its dynamics from the perspective of students' expectations is key to ponder the extent to which this is a useful strategy for self-learning.

The ethnography: context, setting and methods

Context

Beginning in the 1980s, higher education in Chile has undergone a major reform as part of a larger state policy embracing a laissez-faire economy. This included budgetary restrictions (Lehmann 1990; Bernasconi 2015), with the resulting increase of fees for both public and private universities as part of survival strategies. This new landscape not only resulted in a funding/credit policy and public branding, but also in access for credentials for the lower and lower-middle classes. This is the case of nursing training, currently one the most popular subjects, which may cost between US\$3330 and US\$7930 per year. The length of a full-time *Licenciado* programme is five years.

University education has also undergone major methodological reforms. Of strategies adopted in this frame, PBL is the most assimilated one. This move has meant a number of scholars being trained abroad, notably in Canada, and subsequent visiting experts providing advice and consultancy. As the country faces important technological transformations, educational innovation is orchestrated by economic growth and a discourse promoting competition.

Setting

The setting of the study, a university-based nursing school, deserves special attention here. Firstly, the proliferation of universities, and notably of nursing schools, has increased enrolment rates and availability of the healthcare workforce and called for preparedness concerning the 'healthcare industry'. Secondly, this context raises questions about the model of development more broadly and its implications for the higher education system. Lastly, the particularly high permeability of medical education to methodological innovation (Ayala and Torres 2007) opens up a field of analysis rarely explored from its internal dynamics. These threads of interest add to the overall significance of the setting choice since both tend to fuel expectations of students (or parents on their behalf) for academic achievement and employability.

Approach

Our methodology integrates in its approach a combination of Symbolic Interactionism and Grounded Theory techniques (Rock 2005; Charmaz 2006). Grounded Theory facilitated the analysis of data by comparison, between them and across categories, since early stages. Comparison also enabled organisation of the data while interpreting their symbolisms, without affecting the richness of the ethnographic immersion gained through participant observation (LeCompte and Preissle 1993). This way of approaching the problem prioritised the discovery of core ideas and extracting quality data from voluminous field records (Charmaz and Mitchell 2001). Symbolic Interactionism theory (Mead 2009; Blumer 2012), in turn, provided a four-layered frame that was used for structuring the analysis. Data were then grouped into the four layers: (a) the nature of objects; (b) the nature of the human being; (c) the nature of human action; (d) the interrelatedness of social acts. With this, we aimed at providing thick description of the PBL tutorials as a field of students' performance and expectations.

Methods

We were interested in studying practices and behaviours, therefore ethnographic observation was chosen as the most appropriate means to achieve our aim. One of the listed authors was appointed as a tutor in a nursing school, and resorting to this contact with the students, constructed ethnographic records during his experience. Rapport with the students was increased by the small age difference between students and tutor, along with an interest in doing non-academic activities together (i.e. swimming). The ethnographic experience was thus enriched by relatively close social contact that in the process allowed for in-depth exploration of their dynamics and expectations, rather than by solely observing and interviewing. These data were put in perspective via the documents that the school made available to us. Data were then organised into two broad categories, as follows:

Primary data

Participant observation was the main technique. Observations were undertaken in a course whose theoretical contents were taught entirely through PBL. Participants' willingness to cooperate led to further exploration through interviews, questionnaires and other devices. The group was mixed-gender, and the 8 students were aged 20 on average; all of them were new to the PBL method. Observations were complemented with other records of ethnographic interest; among them were sociograms, participant-produced drawings of group dynamics, and nearly 20 individual interviews and group interviews. Fieldwork lasted one academic year, and fieldnotes were recorded systematically on a diary by the researcher-tutor, registering not only facts but also impressions, questions and hypotheses arising from the process. Yet from an early stage, the notes were purposefully classified into observational notes and reflective notes with a focus on their dynamics. Drawings and sociograms were of utmost importance in understanding group dynamics from the students' own perspective. They served not only as a 'data set' but also as elicitors of information during the interviews (Kearney and Hyle 2004; Mannay 2010).

Secondary data

We also gathered institutional documents, mostly corporative policies, syllabi and grade sheets, which allowed us to contextualise the data and guide both observation and analysis. Important for our analysis, through these data we learnt that even if the students did not belong to the cultural elite (Ministry of Education of Chile 2012), they were still able to pass the national entry requirements for higher education and afford high university fees (worth between U\$3'330 and U\$7'930 per year). As stated in institutional documents, the university aimed at 'securing the linkage between its study programmes and the labour market by offering an academic experience focused on the "real world" in a frame of social commitment' (extract).

Analysis

Data were organised through a Grounded Theory approach (Corbin and Strauss 2008), most notably through constant comparison while reading the corpus of notes and interviews, moving gradually from an open coding strategy to a selective coding strategy, adjusting and re-adjusting categories until pieces of data cohered together. This is to say, Grounded Theory was used in sifting patterns from the large dataset. Throughout the analysis, it was crucial to interview participants again, especially to overcome the risk of interpreting their behaviours from an *a priori* stance. As explained, their expectations were important in this study. Key in this process was the use of different visual tools, such as the sociograms, the observer-produced schemes and participant-produced drawings representing group dynamics. Observations were mostly synthesised in schemes, and the observed patterns used later as interview topics.

While our methodological approach secured the overall orientation of the study, the diversity of data sources enhanced the reliability of the data, as it enabled broader possibilities for comparisons and nuances.

Findings

Doing fieldwork: first impressions

A typical PBL session takes place in a tutorial room in the university facilities. The tutor and a group of 5–8 students sit around a large table and analyse a case that has been prepared purposefully as to cover and integrate different subject matters. There are other tutorial groups working on the same case in adjacent rooms, each with the guidance of its own tutor whose records were useful to compare our impression with. The tutorials are expected to unfold in a similar order, as taught during the tutoring training to which the researcher attended previously during six months. As the 3-hour session begins, students brainstorm about what they know about the problem being discussed and establish connections across subjects. The tutor asks questions that help them define their learning goals, such as, Why do you think that's so? Where did you find all that information? How could that be useful in this case?, What other knowledge would we need? These questions trigger interactions between them, they look to each other, they ask each other questions, they share documents they have gathered, and so on. No 'team spirit' has initially been built, but – we assume – they are all there for a reason:

they want to succeed the tutorial, pass the course, and if possible, learn something new. Students know that the tutor is there to guide the discussion and not to give the answers they need; so that by the following week, they should have reviewed more literature and consulted other sources, until they construct a care plan for the case.

However, as the dynamics of the group unfold, they reveal other realities behind these purely academic and clinical interests, which was the point of the departure of this research. In the following, we present and discuss these matters.

Core categories

As patterns consistently surfaced, the findings were organised and reorganised until reaching a meaningful representation of PBL from the perspective of both observer and participants. At the centre of [Figure 1](#), three spheres symbolise the three main resulting categories: Enactment of new roles; Power and control mechanisms; Culture of evaluation. Mediating all three spheres appears the students' expectations area.

The three remaining spheres represent the main dimensions of symbolic interaction used for structuring the analysis. This representation helped aggregate pieces of data

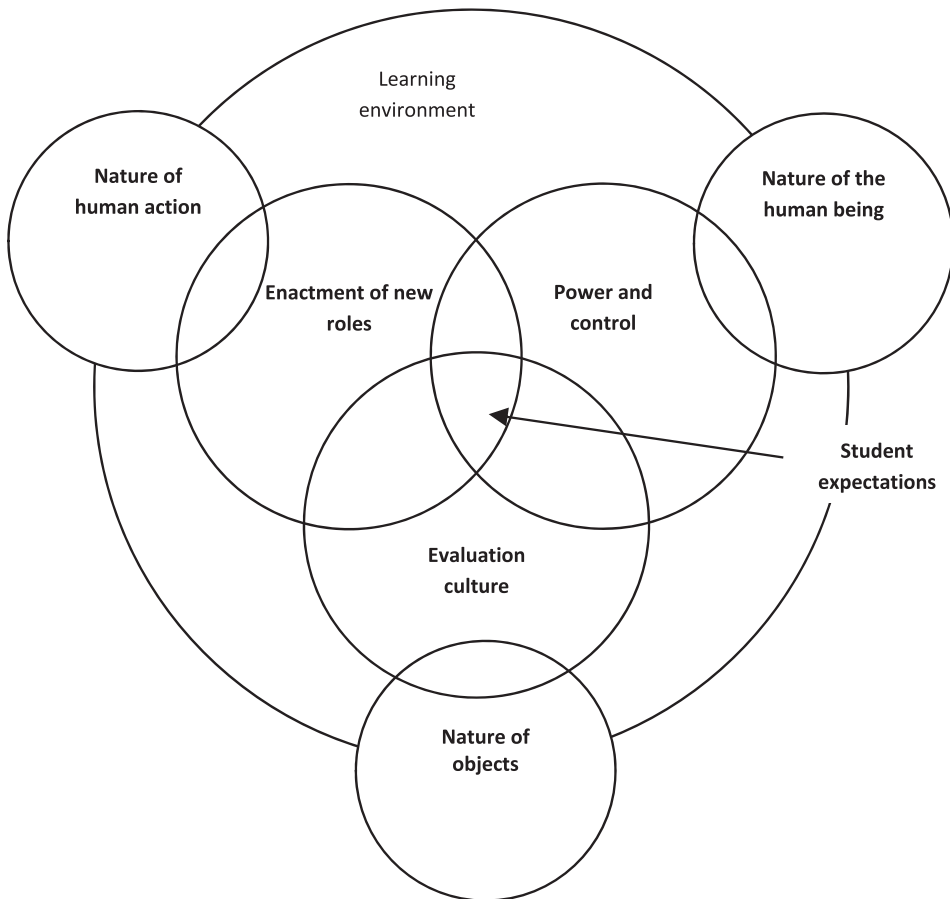


Figure 1. Interrelation between the main categories emerging from the analysis.

during the analysis. We now provide an account of each component, from the centre outwards:

Student expectations

Not only is this a binding piece in analytical terms; expectations were also perceived by the students as a central component of tutorials. Participating in the PBL experience was viewed as an important academic responsibility and a life event, understood as in a continuum of motivation/frustration. This dichotomy was based on the perceived level of exposure in a small group as opposed to be sitting on a large auditorium, losing namelessness and gaining prominence. Inevitably, students reported, being in this PBL experience implied an implicit pressure to speak, which seemed to be the one reason to break the initial silence. Resulting from this pressure, and although tutors expect otherwise, some students might become disinterested in the relational aspects of PBL, an effect that surfaced in the form of mutism, and – in words of one of the informants – the choice to stay ‘alone in the dark’. This was most likely related to the social nature of discussion as a task. The following excerpt from an interview serves as an example:

She was in the spotlight despite wanting to be alone in the dark, and that’s why she began to attract everyone’s attention; we all worried about her and tried to make her speak. (EI 1)

What this passage reflects, which became clearer as the analysis progressed, is twofold: that relational patterns developed through a process of group structuring based on the students’ repeated interactions, and that this structuring was regulated by mutual expectations. Structure was linked to different sectors of the room, as though each seat embedded its owner’s role, defining a patterned space: an ‘illuminated area’ (next to the tutor), a ‘dark area’ (distant from the tutor) and a ‘semi-illuminated area’ (somewhere in between). Interestingly, and although challenged by the group’s leads, the dark-area appeared to develop in an attempt to avoid direct questions and being given counter-arguments, as recorded in fieldnotes:

I’ve noticed they always sit on the same seats. Today, I wanted to stress that pattern by sitting not on my usual seat but on the silent students’ area, who seemed more silent than ever. (Fieldnotes)

Resources for learning, one may remark, were not being taken advantages of by all the students at its fullest. This an important remark, which is further problematised later on in this paper in light of their reasons.

This pattern of space and relations, quite stable until the last sessions, operated as a ‘group memory’. However uncomfortable the leads seemed to be with the dark-area issue, the group expectations about even participation could not be met, leading to a ‘naturalised’ dynamic, as this excerpt from interviews reflects:

I guess once formed, our dynamics were super uniform – same participants talking or leading the tutorial, everyone sitting on their same seats, having kinda the same discussions each session. Like stereotyped, you see? Not boring, but stereotyped after all. (EI 2)

This pattern developed throughout the consolidation of the PBL process, yet there seemed to be an underlying dimension of fiction – the tutorial is an artificially created environment – which was, in fact, faced as a ‘made up’ event. As soon as a session

ended, everyone went their own separate ways, highlighting that the group's existence was restricted to this environment. This was an early sign that their enactment in the tutorial was in some way aligned with their expectations. Alongside our observations, this is what one of our interviewees told us:

Here, within four walls, we were all friends [she emphasises while banging the table]. But out of this room, we each went back to our normal lives. (EI 11)

According to Expectation-Value Theory, this can be explained by the value of the learning goals (social and academic) they were confronted with, which may not be of equal importance for everybody in a tutorial. Reflecting on this, a field note from a discussion between the researchers reads, 'Fair enough, why should it?' There is one implicit reason for this, however. If the tutorials were not mandatory, then the main reason for attending would be the risk of not meeting the requirements to pass the course. It was thus worth exploring group responses to different environmental conditions.

Enactment of new roles and group responses

As students experimented new roles as PBL participants, internal group dynamics started to appear. The analysis uncovered a conflict between the enactment of PBL and its philosophy – a group culture reflects traits of society more broadly.

Important for the Expectation-Value perspective, the interviewees consistently commented that throughout the course they 'pretended' playfully to be adult learners; but behind closed doors they agreed on how to spot the gaps of the system and implement their own strategies. The behavioural changes we registered during the observations developed as adaptive tactics, for the group adjusted itself to external factors. Resonating Eccles' theory, the group produced three types of responses:

- *indifference* towards opportunities that were not valued by the participants, in the face of no considerable pressure over them.
- *organisation*, arising from pressures over the participants, in the face of few opportunities.
- *complicity*, when elements of the immediate environment threatens the prospect of individual academic success.

While all three are relevant to the prospect of success, the latter deserved special attention, as the underlying reasons related to two PBL features – the tutoring and the new ways of learning assessment – that challenged longstanding traditions of education. Institutions often assume that grading is a neutral reflection of standardised assessment practices (Kalthoff 2013), like self-grading, which assumes that students accurately assess their own performance. As our observations uncovered, 'complicity' was triggered by a perceived threat. When visited the coordinating academic after the mid-term grades, we contrasted the documents that she availed to us: peer-evaluation grades – extremely high (9.6/10) with virtually no dispersion – against the grades by the tutor – with significantly lower grades (7.8/10) and considerable dispersion. However, in another meeting with the coordinator, we found that weekly peer-evaluation tended to be more realistic when it did *not* lead to grades (e.g. in oral feedback at the end of each session), as reflected in a group interview after the examination period:

We feel more relaxed now, we can comment on each other's performance freely and naturally. Whatever we say to each another now, it won't affect our grade. (EG 16)

This behaviour has been conceptualised as a form of resistance towards school and teachers (Högberg 2011). However, the dynamics embedded in the practice of PBL rendered clear important insights in light of expectancy theory, too. Although participants might see PBL as a fictional environment and may have even developed a 'resource' to stage a performance for the tutor, Goffman (1959) already discussed this problem, stating that *all* interaction is a performance. The problem rather lies in the reasons for performing the self-learner role. Intriguingly, the observed zones of interaction (light/dark) can inform those reasons: those sitting on the illuminated zone tended to lead the group to scenarios of 'risk' (i.e. thinking 'outside the box', suggesting sophisticated problem-solving strategies), likely as a way to test their own capabilities; whereas those sitting in the dark-area tended to anchor the group in more secure scenarios (i.e. proposing more conventional approaches), likely as a way to avoid feeling in the spot.

Power and control

Handbooks of PBL often assert that group interaction motivates attitude, disposition and commitment towards learning. However, the importance of the hierarchical structure of this particular cultural setting seemed to operate as a 'reason' for self-learning, where hierarchies are regarded as key to social order.

As uncovered by our observations, power operates through academic devices of supervision and control. In the PBL structuring the top position is assigned to the tutor, to whom the arguments are presented asking implicitly for approval. This pattern was repeatedly recorded in the field diary in the form of arrows pointing to the tutor. This reinforced the tutor's figure as knowledge-holder, creating in the process a mechanism to evaluate the students' reasoning – 'if the tutor approves, then it must be correct':

Whenever they speak, they address me, as though giving an account of their searches throughout the week. (Fieldnotes)

In elevating the tutor into a dominant position, it was judicious to wait for and give in to his directions, validating by this token the figure of an authority, rather than that of a mentor. But more importantly, the decision for this reasoning seemed heavily connected to the tutor's approval. Our impression was reinforced in a group interview at the end of the course, where the tutor was mimicked by one of the students:

I am now being caricatured as keeping an attentive gaze over the students' actions, taking notes of what happens, codified in the form of arrows. (Fieldnotes)

We also observed behavioural changes right after students were given their early grades. Such changes were further understood as observations evolved, coming to question a, taken-for-granted, PBL-driven empowerment – grades, rather than purely internal motivation, acted as a mechanism of control:

They've just received their early grades. Those who typically begin the discussion went on doing the same, though seeming more spontaneous – they actually look very comfortable balancing themselves on their chairs while discussing their hypotheses about today's case.

Cassandra and Angela, normally not so active, took more initiative today. (Filed notes)

We were all exposed and we knew we were. Whenever in the dark zone, anyone could notice it. It's all about speaking, that's the whole point about PBL. (EI 8)

Intriguingly, towards the last sessions there appeared a notion that upheld the belief that examinations are the ultimate goal of a course, thus the expectations and the 'staged' performance. Accordingly, students expected that PBL 'should' unfold in accordance with the examinations – rather than on the students' own learning goals – as explained in a group interview:

- Maybe, you as a tutor might have failed to tell us what the most important contents were, those to be included in the exam.

- I see. But don't you think that telling you so might have prevented the group from developing their own hypotheses and solving skills?

- I don't think so. Our performance in the tutorial is still subjected to evaluation and grades, so I don't think we'd get lazy.

As I look at them after this answer, everybody seems to agree. (EG11)

While control has long been an institutionalised value in education, tutors become a key piece of that mechanism, exerting procedures of supervision and inspection, and therefore determining the mechanisms that students will implement to succeed. This notion transpired, too, into other ethnographic registers, seeming to permeate the entire operation of PBL:

In response to the question 'how do you see the tutorials?' posed during a group interview, a participant drew the group competing in a soccer match (Figure 2). The two contender teams corresponded to two fractions of the actual PBL group – those on the illuminated zone and those on the dark zone – with the tutor banning a member for breaking the rules. Intriguingly, the disqualified member was the student who performed the most sophisticated self-learning skills, likely for being perceived as a threat for the expected attainment of grades.

Data recurrence on control and supervision also became salient in reference to notes recorded by the tutor, which for a mere conventionalism included symbols, like arrows, reflecting students' participation. They soon learnt that the arrows translated into grades (Figure 3), and behaved accordingly:

Near the end ... I started to talk more. And twas because I was really stressed out for not having enough arrows [laughs]. At the beginning didn't wanna do anything, and then twas like 'oh, no, the freaking arrows' ... and just spoke a little. (EI 7)

Two participants, who told us separately what happened in the group when the tutor had to leave the room momentarily, further illustrated the mechanisms securing their prospects of success. It is noticeable the internal group organisation to look through the tutor's records and check each one's score:

- We checked the arrows you were drawing.

- So, the arrows were the conversation subject when I wasn't here ...

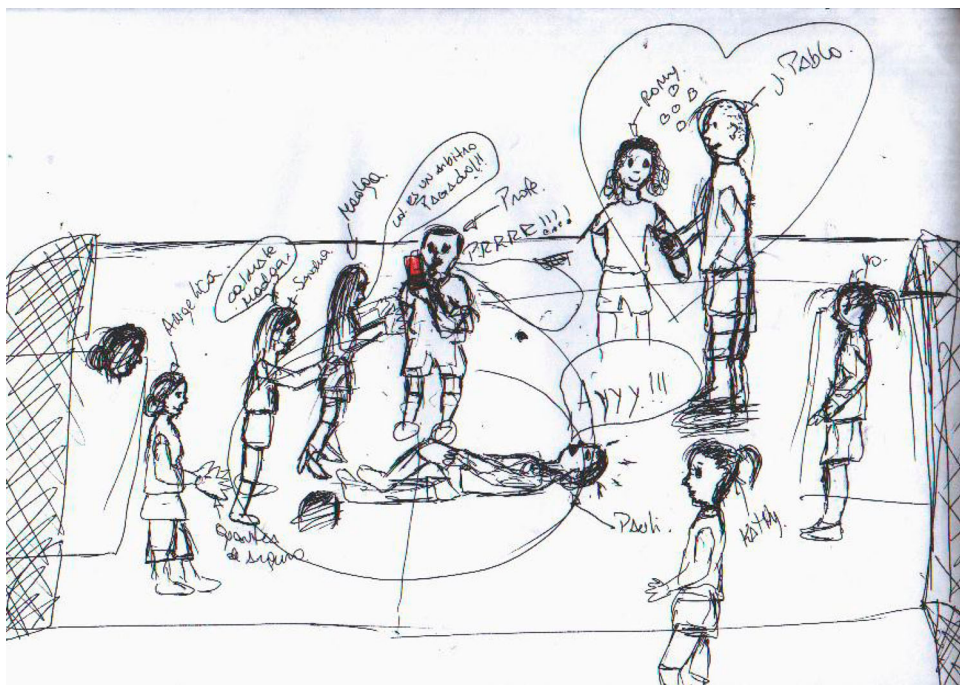


Figure 2. Ethnographic register: participant-produced drawing. The red card is the only coloured object in the picture.

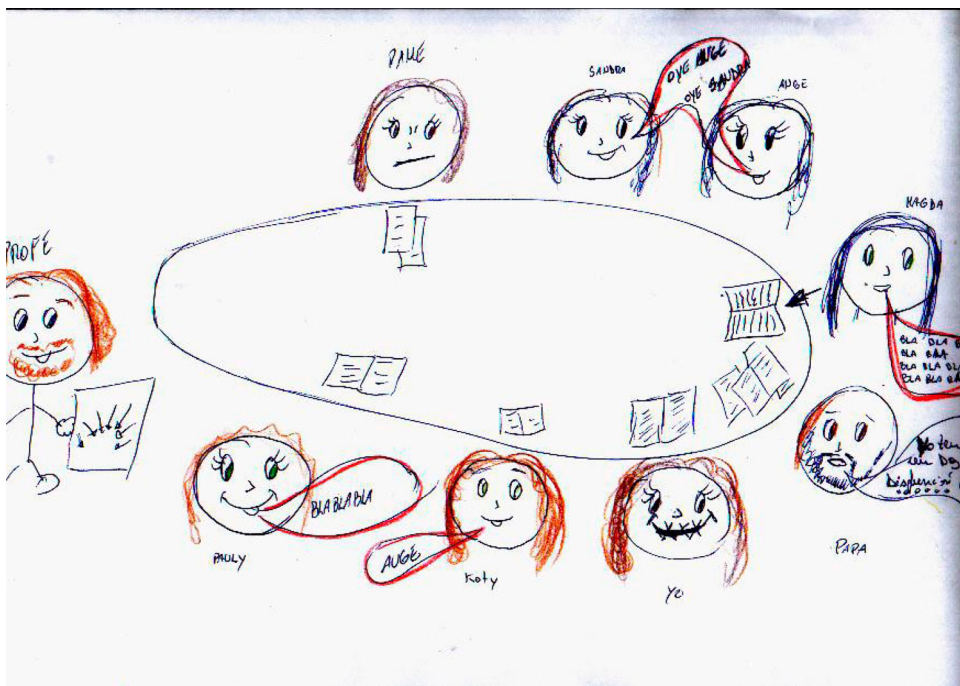


Figure 3. Ethnographic register: participant-produced drawing. Students understand that the tutor's records are translated into grades.

- Yes, to the point that we counted them and told the others 'you have too few, you have enough, or you have a lot.' Paula stuck her head out the door to watch if you were coming back, as the rest checked your papers [laughs]. (EI 2)

At the end of the year, after the evaluation period, a group interview was aimed at reproducing the tutorials, but without being subject to evaluation. Expectedly, the tutor represented neither power nor control, but this session seemed useful as a 'negative case', so as to observe regularities between the patterned behaviours and the contextual demands. The encounter resulted in denser group interaction (field records are represented in Figure 4), although group activity tended to be much more disorganised and less focused on the task they were given, and in the inability of the tutor to influence the group dynamics. This observational except is very telling:

Several months have passed. I notice important changes: Palmenia hasn't come to these encounters, students shriek with laughter, they go out and come back to the room more frequently, talk more colloquially and loudly, and interrupt each other. But above all, my questions and directions have less influence on them. (Fieldnotes)

While this observation brought an important dimension of students' expectations to the fore, this result also contrasts to the notion of self-directed learning heralded by the philosophy of PBL, which holds that motivation develops from autonomous problematisation. However, one may ask, Is this problem to be attributed entirely to the students and their expectations? Coercive assessment approaches often generate evasive mechanisms, and paradoxically, those mechanisms aim to overcome the constraints of such approaches.

Culture of evaluation

Approaching the intricate interplay between expectations, reasons and resources of the PBL didactics implies regarding its processes as cultural realities, not as a purely technical ones. Under this lens, the mechanisms and devices for assessing academic performance cut through both methodological and cultural layers of the process. By considering evaluation as a cultural construct, one can comprehend the different group responses to different case scenarios of PBL assessment, as shown above, where both reasons and resources become apparent.

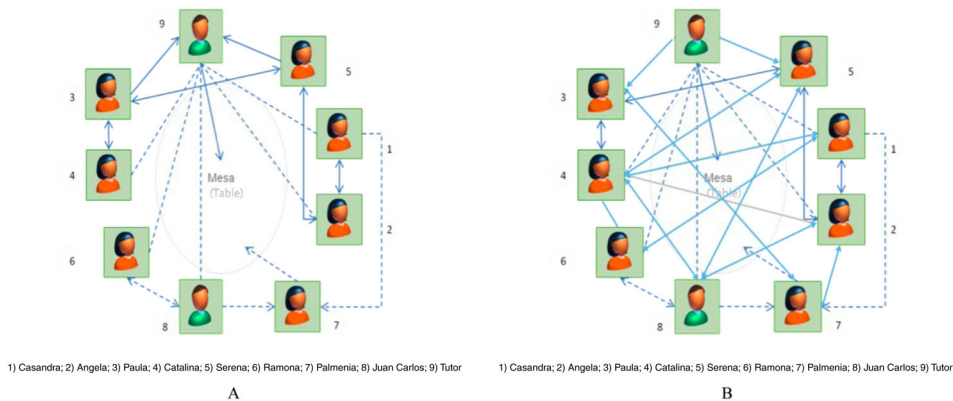


Figure 4. Sociograms: Group interaction. (A) Subjected to scores, (B) not subjected to scores.

As far as evaluation is concerned, although peer solidarity was considered to be a vastly appreciated value, it did not seem to lead to mutual support for sharpening learning skills. As observed after each session, it rather served to furnishing each other with high scores in peer-evaluation sheets. Despite outcomes grades, ethnographic notes and oral feedback telling otherwise, peer-evaluation did not reflect students' participation realistically. Discussing this in the tutors' meetings, they offered explained this was something the actually expected, an explanation that coincided with disapproving body language. In contrast, their previous experiences in foreign universities led them to a somewhat suspicious attitude towards the real cultural fitness of PBL for their home university. Yet, they continued to highlight its advantages, compared to conventional lectures. In this cultural setting, giving low – albeit fair – grades is easily taken as personal confrontation, as explained by one student:

Nobody wants to hurt others by being 'too honest.' I was fairly honest with the grades I gave ... but not as honest as I should have been. Their performance sometimes was just for 1 or 2 points, no more than that. (EI 5)

We again uncovered in this practice an underlying prospect of success. Based on this expectation, students faced peer-evaluation by pondering the risks of giving low scores with the eventual result of receiving equally low scores in return (field records are synthesised in Figure 5).

The self-ensuring mechanism we observed may explain why honest oral feedback was not consistent with peer-evaluation scores:

If I gave a low score to somebody in a tutorial, next tutorial I'd be destroyed. So we just gave good scores to everyone deliberately. (EI 4)

Lastly, the subtle idea of competition – expressed in one of the drawings – was, too, connected with this self-ensuring reasoning, likely linked to the interaction with self-

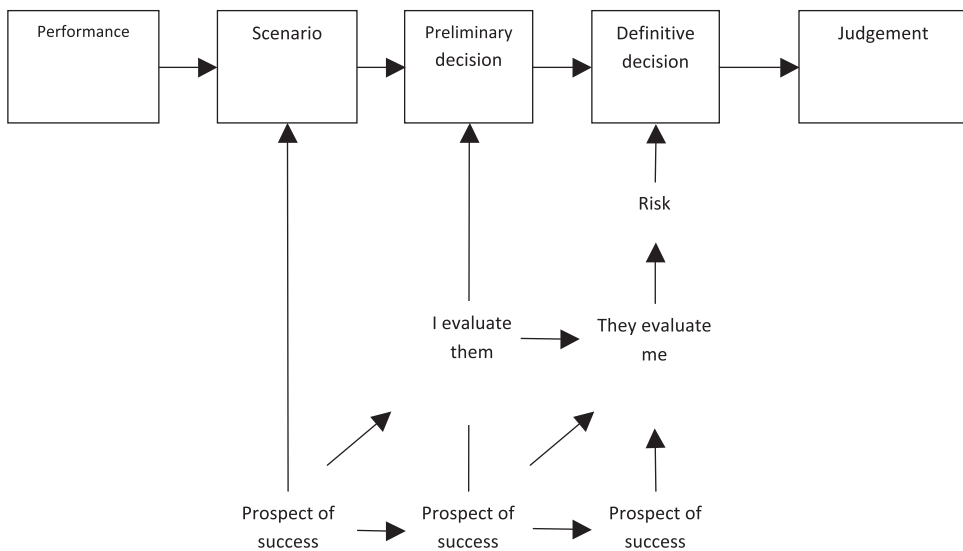


Figure 5. Decision tree for peer evaluation.

learners and the configuration of zones, and the careful feedback given to the tutor. In view of this dimension, our observations bring two insights relating the intrinsic value of evaluation:

- (a) Evaluation is a part of a solidarity mechanism operating throughout the educational process. Such mechanism is reinforced by self-ensuring actions in peer-evaluation and evaluation to the tutor. Central to this mechanism is the expectation of passing the course, rather than holding to self-set learning goals. Our position becomes clearer when considering the length and the cost of study programmes in this setting – five years of university education on a full-time basis, which represents an additional pressure arising from the investment of the families.
- (b) This evaluation culture might promote a style of tutoring coherent with the solidarity reasoning, likely a paternalistic one – a style tending to do for the students what they could do by themselves – fuelling in this way the prospect of success and the solidarity reasoning altogether. This is not to say that tutors deliberately tolerate cheating on the evaluations. They may rather feel empathetic towards the pressures students and their families are under, and ponder the relative significance that self-leaning skills may have in this cultural setting.

All in all, this value system may well account for important cross-national differences in regard to the success of PBL, with attitudes of students and tutors, mediating an important effect in attributing value (or not) to actual self-learning.

Discussion

While PBL has largely been addressed as a philosophy and as a methodology (Neufeld and Barrows 1974; Holen 2000; Schmidt, Vermeulen, and van der Molen 2006; Schmidt, Rotgans, and Yew 2011), ethnography can be a useful approach to examine that which is actually taking place in PBL tutorials. This was the main purpose of our project. By using a nursing class as a setting, this is the first study undertaken in a Chilean university looking critically at the practice of PBL as culturally constructed.

Without aiming to achieve topic representativeness, our study raised the question of PBL as a one-fit-all method in regard to cultural realities, which is the biggest challenge educationalists might want to reconsider. The case of expectations we have made, and the resulting mechanisms that are implemented in gap spotting and strategy development, depicts PBL tutorials in a different light. This is not to say that these devices are specific to PBL. They are likely to be cultural devices that operate across the education system of this particular setting, which have been transposed to PBL. However, our approach did not aim to explore that process and can thus be further problematised.

It can be argued that there may have been effects induced by the researcher, who was also the tutor of the group. However, this strategy allowed for the closest possible analysis to the PBL dynamics as they are. Furthermore, those effects were minimised by engaging in meetings with other tutors and comparing the field observations with the dynamics observed when trained as a tutor. Not least, another of the authors tutored in a parallel PBL group, with whom a large portion of the analysis was undertaken; her training in a foreign university was helpful in critically identifying cultural differences in the PBL practice.

Similarly, the use of various techniques throughout was reassuring. As surfaced early in our work, Remedios, Clarke, and Hawthorne (2008) suggest that only part of PBL can be captured from observation. Although differing in focus, they advocate, too, for methodological diversity when intending to comprehend PBL. This is an important insight that other PBL researchers can benefit from, on the proviso that systematising data from many sources at a time can be experienced as overwhelming. A Grounded Theory approach – or, indeed, a similar one – may be useful as a method for coding and comparing different data from early stages.

As demonstrated, a focus on cultural norms can be beneficial, which may account for a bottom-up understanding of new learning methodologies such as PBL. Another of the few similar ethnographies available (Cennamo et al. 2011) may illustrate this point, for it showed, too, the role of expectations in solving cases and defining possible solutions. But since the scope of our research was other than case-solving *per se*, we were not able to compare findings as wished.

Ethical aspects also need attention. Given the observer/tutor position of the main researcher, all of the interviews were undertaken after the examination period, so that the participants could feel free to decline; their actual names have been held. Additionally, the balance between tutoring and observing was constantly scrutinised not to leave the pedagogical purposes on a second place; for example, notes about students' participation were used for mapping interactions for the ethnography, avoiding as a result doing double job. PBL assessment includes both content and interaction.

Finally, as far as theory is concerned, ethnographic research bodes well for continuous theorising within the Expectation-Value frame (Eccles 1983; Eccles, Wigfield, and Schiefele, 1998; Wigfield and Eccles, 2000; also Stam 2017). Cultural devices are much more intricate and complex than interviewing alone can capture, as illustrated through the dynamics, roles and relations we researched.

Conclusions

In this article, we have made the case of PBL as a black box and have offered a useful perspective to overcome some issues of research in this area. Through a variety of ethnographic techniques, we have conceptualised our setting as a field of expectations. This highlights the enactment of roles and responses that embed the reasons and resources that mediate expectations. Having the structure of higher education and cultural norms as a background, it is plausible to believe that the reasoning behind gap spotting and strategy development may well be explained by the prospect of success on the part of the students – typically, grades. This is to say the transition from lectures to tutorials may have carried with it inveterate practices that are intimately tied to cultural values. The dynamics uncovered regularities between context and behaviour that eventually threaten the development of complex self-learning abilities.

The categories presented here serve as a conceptual tool to evaluate PBL across cultural settings so as to answer the question, to what the extent may methodological innovations such as PBL be considered as successful? Given their dual role in educational attainment and PBL dynamics, exploring students' expectations may help find answers.

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References

- Ambady, N., and R. Rosenthal. 1992. "Thin Slices of Expressive Behavior as Predictors of Interpersonal Consequences: A Meta-Analysis." *Psychological Bulletin* 111 (2): 256–274.
- Ayala, R., H. Messing, and S. Toro. 2011. "El sentido didáctico del 'Aprendizaje Basado en Problemas' en la educación médica [The Didactic Intention of PBL in Medical Education]." *Educación Médica Superior* 25: 344–351.
- Ayala, R., and M. C. Torres. 2007. "Didáctica de la enseñanza: prácticas ejemplares en el sector salud [Didactic of Teaching: Best Practices in Healthcare]." *Educación Médica Superior* 21: 1–8.
- Barret, T. 2005. "Who Said Learning couldn't be Enjoyable, Playful and Fun." In *PBL in Context – Bridging Work and Education*, edited by E. Poikela, and S. Poikela, 159–176. Tampere: Tampere University Press.
- Barrett, T. 2010. "The Problem-based Learning Process as Finding and Being in Flow." *Innovations in Education and Teaching International* 47 (2): 165–174.
- Barrett, T. 2013. "Learning about the Problem in Problem-Based Learning (PBL) by Listening to Students' Talk in Tutorials: A Critical Discourse Analysis Study." *Journal of Further and Higher Education* 37 (4): 519–535.
- Bernasconi, A. 2015. *La educación superior de Chile: Transformación, desarrollo y crisis*. Santiago: Ediciones Universidad Católica de Chile.
- Blumer, H. 2012. "Symbolic Interactionism." In *Contemporary Sociological Theory*, edited by C. Calhoun, J. Gerteis, J. Moody, S. Pfaff, and I. Virk, 62–74. Oxford: Wiley-Blackwell.
- Bridges, S., M. Botelho, J. L. Green, and A. C. Chau. 2012. "Multimodality in Problem-Based Learning (PBL): An Interactional Ethnography." In *Problem-Based Learning in Clinical Education. Innovation and Change in Professional Education*, Vol. 8., edited by S. Bridges, G. McGrath, and T. Whitehill. Dordrecht: Springer.
- Brophy, J. E. 1981. "Teacher Praise: A Functional Analysis." *Review of Educational Research* 51 (1): 5–32.
- Brophy, J. E. 1983. "Research on the Self-Fulfilling Prophecy and Teacher Expectations." *Journal of Educational Psychology* 75 (5): 631–661.
- Brophy, J. E., and T. L. Good. 1970. "Teachers' Communication of Differential Expectations for Children's Classroom Performance: Some Behavioral Data." *Journal of educational psychology* 61: 365–374.
- Cennamo, K., C. Brandt, B. Scott, S. Douglas, M. McGrath, Y. Reimer, and M. Vernon. 2011. "Managing the Complexity of Design Problems Through Studio-based Learning." *Interdisciplinary Journal of Problem-Based Learning* 5 (2): 12–36.
- Charmaz, K. 2006. *Constructing Grounded Theory. A Practical Guide Through Qualitative Analysis*. London: Sage.
- Charmaz, K., and R. Mitchell. 2001. "Grounded Theory in Ethnography." In *Handbook of Ethnography*, edited by P. Atkinson, A. Coffey, and S. Delamont, 160–174. London: Sage.

- Cooper, H. M., and T. L. Good. 1983. *Pygmalion Grows Up: Studies in the Expectation Communication Process*. New York, NY: Longman.
- Corbin, J., and A. Strauss. 2008. *Basics of Qualitative Research*. Thousand Oaks, CA: Sage.
- Da Silva, A. L., and R. Dennick. 2010. "Corpus Analysis of Problem-based Learning Transcripts: An Exploratory Study." *Medical Teacher* 44: 280–288.
- Duch, B. 2001. "Writing Problems for Deeper Understanding." In *The Power of Problem-based Learning: A Practical 'How to' for Teaching Undergraduate Courses in any Discipline*, edited by B. Duch, S. Groh, and A. Allen, 47–53. Sterling, VA: Stylus Publishing.
- Eccles, J. 1983. "Expectancies, Values, and Academic Behaviors." In *Achievement and Achievement Motives*, edited by J. T. Spence, 75–146. San Francisco, CA: Freeman.
- Eccles, J., A. Wigfield, and U. Schiefele. 1998. "Motivation to Succeed." In *Handbook of Child Psychology: Social, Emotional, And Personality Development*, edited by W. Damon and N. Eisenberg, 1017–1095. New York, NY: Wiley.
- Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley: University of California Press.
- Goffman, E. 1959. *The Presentation of Self in Everyday Life*. New York, NY: Doubleday.
- Hak, T., and P. Maguire. 2000. "Group Process: The Black box of Studies on Problem-based Learning." *Academic Medicine* 75 (7): 769–772.
- Holen, A. 2000. "The PBL Group: Self-reflections and Feedback for Improved Learning and Growth." *Medical Teacher* 22: 485–488.
- Högberg, R. 2011. "Cheating as Subversive and Strategic Resistance: Vocational Students' Resistance and Conformity Towards Academic Subjects in a Swedish Upper Secondary School." *Ethnography and Education* 6 (3): 341–355.
- Kalthoff, H. 2013. "Practices of Grading: An Ethnographic Study of Educational Assessment." *Ethnography and Education* 8 (1): 89–104.
- Kearney, K. S., and A. E. Hyle. 2004. "Drawing Out Emotions: The Use of Participant-produced Drawings in Qualitative Inquiry." *Qualitative Research* 4 (3): 361–382.
- Koschmann, T., and B. MacWhinney. 2001. "Opening the Black Box: Why We Need a PBL." *Teaching and Learning in Medicine: An International Journal* 13 (3): 145–147.
- LeCompte, M. D., and J. Preissle. 1993. *Ethnography and Qualitative Design in Educational Research*. New York: Academic Press.
- Lehmann, C. 1990. "Antecedentes y tendencias en el sistema de financiamiento de la educación superior chilena." In *Financiamiento de la educación superior: Antecedentes y desafíos*, edited by C. Lehmann, 31–78. Santiago: Centro de Estudios Públicos.
- Mannay, D. 2010. "Making the Familiar Strange: Can Visual Research Methods Render the Familiar Setting More Perceptible?" *Qualitative Research* 10 (1): 91–111.
- Marzano, R. J. 2007. *The Art of Science and Teaching*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Mead, G. H. 2009. *Mind, Self, and Society: From the Standpoint of a Social Behaviorist*. London: University of Chicago Press.
- Merton, R. K. 1968. *Social Theory and Social Structure*. New York: Free Press.
- Ministry of Education of Chile. 2012. *Empleabilidad e ingresos. Estadísticas por carrera. Distribución según establecimiento de origen (matrícula 2011)*. <http://www.mifuturo.cl/index.php/futuro-laboral/buscador-por-carrera>.
- Neufeld, V., and H. Barrows. 1974. "The 'McMaster Philosophy': An Approach to Medical Education." *Journal of Medical Education* 49 (11): 1040–1050.
- Nieminen, J., P. Sauri, and K. Lonka. 2006. "On the Relationship Between Group Functioning and Study Success in Problem-based Learning." *Medical Education* 40 (1): 64–71.
- Prosser, M., and D. Sze. 2014. "Problem-based Learning: Student Learning Experiences and Outcomes." *Clinical Linguistics & Phonetics* 28 (1–2): 131–142.
- Remedios, L., D. Clarke, and L. Hawthorne. 2008. "Framing Collaborative Behaviors: Listening and Speaking in Problem-based Learning." *Interdisciplinary Journal of Problem-Based Learning* 2 (1): 1–20.

- Rock, P. 2005. "Symbolic Interactionism and Ethnography." In *Handbook of Ethnography*, edited by P. Atkinson, S. Delamont, A. Coffey, J. Lofland, and L. H. Lofland, 26–38. Trowbridge: Cromwell.
- Schmidt, H. G., J. I. Rotgans, and E. H. J. Yew. 2011. "The Process of Problem-based Learning: What Works and Why." *Medical Education* 45 (8): 792–806.
- Schmidt, H., L. Vermeulen, and H. van der Molen. 2006. "Long Term Effects of Problem-based Learning: A Comparison of Competencies Acquired by Graduates of a Problem Based and a Conventional Medical School." *Medical Education* 40 (6): 562–567.
- Stam, T. 2017. "Reasons and Resources: Understanding Pupils' Aspirations in Lower Vocational Dutch Education." *Ethnography and Education* 12 (3): 259–270.
- Weinstein, R. S. 2002. *Reaching Higher: The Power of Expectations in Schooling*. Cambridge: Harvard University Press.
- Wigfield, A., and J. S. Eccles. 2000. "Expectancy-Value Theory of Achievement Motivation." *Contemporary Educational Psychology* 25 (1): 68–81.