# Journal of Management Education

## In Favour of Large Classes: A Social Networks Perspective on Experiential Learning

| Abstract: | Most of the literature has viewed large classes as a problem and a challenge. Furthermore, large classes are often presented to be an obstacle to students' experiential learning and a multitude of solutions can be found in the literature to manage large classes; solutions that include innovative technologies, alternative assessment designs, or expanding the capacity of delivery. This conceptual paper advocates that large classes, when used intentionally as a pedagogical tool, can be a powerful means for socialised and experiential learning for our students. In this work we connect the phenomenon of large classes with social network theory and concepts and we re-conceptualise large classes as a social micro-cosmos consisting of a multitude of interconnected student communities. On this conceptual basis we offer three positive features of large classes: i. higher levels of freedom for students to learn in their own terms ii. learning from a diverse body of students and iii. the provision of meaningful experiences of learning. We conclude with suggestions that should enable educators in large classes shift from an individualistic psychology-based model of experiential learning to a sociological model of experiential learning. |

**Introduction**

We enjoy managing and teaching large classes. In fact, we hold the belief that there are educational activities that may be meaningless without a large cohort to participate in them (some interesting examples can be found in: Arvanitakis, 2014). However, in the literature, there appears to be a preference towards smaller classes (Cuseo, 2007; Exeter et al., 2010).

There are good reasons for this preference as experiential learning is thought to happen when the learners and the instructor form strong connections (Wagner III and Van Dyne, 1999; Messineo et al., 2007; Laru et al., 2012; Woollacott et al., 2014). In addition, empirical evidence seems to suggest that students prefer smaller classes (Wagner III and Van Dyne, 1999; Cooper and Robinson, 2000). In smaller classes students may be more willing to share their own experience and wisdom, as well as to engage in activities that enhance experiential learning and the inter-personal relationships necessary for trusting and meaningful interactions.

Furthermore, larger classes are challenging: they require a more complex delivery (Arvanitakis, 2014; Maringe and Sing, 2014), they command higher marking loads (Hornsby and Osman, 2014), and entail the management of a larger student population with a diverse set of expectations (Cullen, 2011). For the lead educator of a large cohort module there is the added complexity of managing the teaching team which will deliver the content and will manage the  learning experience for these students (Exeter et al., 2010; Broadbent et al., 2018). Thus, large classes can be seen as an inconvenient necessity, a practical and cost-effective means of balancing teaching against all the other demands on faculty such as

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research, academic management, and enterprise (Cuseo, 2007; Game and Metcalfe, 2009; Dean and Wright, 2017; Broadbent et al., 2018).

Unsurprisingly then, the literature on large classes seems relatively one-sided, mostly highlighting all these challenging aspects. We felt that this Journal of Management Education special issue offers an appropriate forum to redress, at least partially, the balance of the debate on large classes. Fundamentally, we are proposing that there are joys and benefits in adopting meaningfully and thoughtfully large class formats as a means of socialised learning, such benefits may not be easily delivered in small classes. In the process we are aiming to address an important critique of experiential learning theory as being overly focussed on individual experiences at the expense of the social dimensions of learning (Kayes, 2002). We use as a source for our argumentation our reflections on our own experience and practice as educator blended with conceptualisations derived from the experiential learning literature, social networks literature, and management education literature. True to the spirit of experiential learning, we use reflections from our own personal and professional experiences as students and faculty to argue that there is pedagogic merit in large classes.

This article has three parts. The first part is split into three interconnected sections: firstly, we define large classes then in the second section we introduce experiential learning theory (ELT) in education and in the last section we connect experiential learning to large classes. The second part has two interconnected sections: the first section introduces the main concepts of social network theory and provides the building blocks that will help us examine the social ecology of a large class. In this section, we introduce Hirschman's theory

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of group behaviour (Hirschman, 1970) to explain how the size of a network impacts on members' movement and interactions. In a sense we are suggesting that experiential learning at a social level is anchored on the behaviours of members in a particular social group vis-à-vis other social groups within a particular society (in this case within the classroom). This emphasis on social interactions is particularly important as social network literature has established early on that active participation within a community is a powerful contributor to learning  (Lave and Wenger, 1991; Wenger, 1998). The second section expands on the positive aspects a large class can confer on the learning and teaching experience of both the student and the educator. The last part covers the implications of our work on the role of the educator when engaging with a large class format where we outline how the role and skillset the faculty should have when tackling a large class are different from smaller classes. We finish with the conclusions where we summarise the main argument.

**Large Classes and Experiential Learning**

**Large Classes**

There is a wealth of definitions (for example: Exeter et al., 2010; Hornsby and Osman, 2014; Maringe and Sing, 2014) on what constitutes a large class. The concept changes depending on the kind of institution, the socio-cultural context the institution operates in and, at a more operational level, the mode of delivery (Dean and Wright, 2017). For example, on the one hand we have the typical MOOC experience where thousands of students can be seen as part of the same "class" and yet each student may never meet another student (Maringe and Sing, 2014). That kind of setup is feasible with the current

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technology which allows for vast and complex virtual learning environments. In contrast,

some small UK-based universities may have a total student population of three thousand

and in such institutions a class of 60 students can be seen as large (Dean and Wright, 2017).

However, in larger institutions a class size of 60 would be deemed as small and a class of 150

could be perceived as a medium-sized class.

To complicate things further, the definition of large classes can differ by discipline

(Hornsby and Osman, 2014). For example, a cohort of 30 undergraduate fine arts students

doing a single module could be considered large (Hornsby and Osman, 2014), regardless of

the UK Higher Education institution. However, in the business and management discipline a

cohort of a 100 students would be small, medium or large depending on the size of the

particular business school. The discipline effect is a consequence of supply and demand

forces and the popularity of each discipline. For example, in the UK for the year 2017-18 the

various undergraduate business disciplines combined had a rounded total of 216,000 home

students whilst the law discipline had a rounded total of 69,000 students, making the

potential student population of the business disciplines threefold that of the Law discipline

(HESA, 2019). Thus, the average business schools have much larger student cohorts than law

schools and indeed business classes with a 100 students are a regularly observed

phenomenon.

As we are addressing large classes from a management education perspective, we have

defined a large class as a class larger than a 100 students. Furthermore, our definition of

large classes is limited to a single collocated cohort and most importantly the mode of

delivery should provide social network opportunities for each single student to establish

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social connections with any other student within the cohort. That could be within a

traditional, physically bound classroom where the social networks can readily be observed,

within a blended learning environment that combines physical and virtual elements, or even

within a virtual delivery mode that combines synchronous and asynchronous activities and

provides opportunities for social interactions among the students. Our definition of large

classes is valid with all three modes of delivery, and our social network perspective still

holds when the delivery is using technology and online learning and teaching approaches

that facilitate interactions among the learners. The ability of this technology to enable social

learning is particularly important during these precarious times where the Covid-19

pandemic has affected the Higher Education sector fundamentally and most universities

moving a substantial part of their delivery online.

**Experiential Learning Theory and Experiential Education**

Experiential Learning Theory (ELT) views learning as "the process whereby knowledge is

created through the transformation of experience" (Kolb, 1984: 41). It involves the interplay

between two interdependent dimensions of knowledge: acquisition and transformation.

Knowledge acquisition is achieved when the learner resolves the learning tensions between

two dialectical modes: concrete experience and abstract conceptualization. Knowledge

transformation occurs when the learner resolves the tension between two dialectical

modes: reflective observation and active experimentation (Kayes, 2002). These four modes

of knowledge constitute the experiential learning cycle. In the experiential learning cycle,

processes of knowledge acquisition and knowledge transformation are intertwined. That is,

immediate or concrete experiences are the basis for observations and reflections. These

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reflections then lead to abstract conceptualisations which lead to new implications for action. These implications for action can be actively experimented and can create new experience, thus re-iterating the learning cycle.

A common approach in experiential education is when the educator purposefully designs a learning activity for students to 'experience'. Through carefully-crafted experience and regular educator-engaged feedback, the experience provides direction, continuity, and progress in students' learning, so that students can focus on reflection which would lead to an increase in knowledge and skills which would be relevant to the learning outcomes of the teaching experience (MacNab, 2012). Experiential education is relevant to all three modes of delivery even though it may not be immediately apparent when applied to an online delivery mode. However, there is strong empirical evidence that experiential education can be facilitated via virtual learning environments and other online technologies even though there may be some differences in terms of the kind of outcomes that can be achieved. For example, Park et al. (2020) found that web-based experiential learning is more effective in improving students' knowledge and skills, but did not affect students' attitudes toward their practice. Arnold and Paulus (2010) used the nature and functionality of a social networking website, *Ning*, to engage in experiential learning while Kaneko et al. (2018) created a game-based experiential learning environment on mobile devices. However, when online the teachers seem to exercise less control on how students experience the learning materials and often there are deviations in the way students use the online learning systems compared to how the instructors intended them to use the systems (for example: Tsay et al., 2018).

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**How Large Classes Complement Experiential Education**

Kolb's framework has been criticised by scholars for its overemphasis on rationality, cognition, and the centrality of individual experience, leading to the de-contextualising of the learning process and a limited account of the emotional, cultural, social, and physical factors and unconscious processes that influence learning (Kayes, 2002; Seaman, 2008). This over-psychologised approach advocated by ELT fails to tackle some of the social and political issues, intrinsic to all educational experience (Game and Metcalfe, 2009; Reynolds, 2009; Taylor, 2018). The weak acknowledgement of power distributions and control, and insufficient analysis of it in learner-learner, learner-educator relationships, and in relation to the wider society at the theory level (Vince, 1998), has resulted in rendering the role of experience in experiential education at the practice level as mainly a technical issue, a question of design, and mode of delivery.

We suspect that it is exactly this limitation at both theory and practice that has led to the deliberate omission of experiential learning pedagogies in large class settings. Indeed, one may argue that the literature has highlighted challenges with experiential learning in general (e.g. the difficulty of accounting for the whole curriculum and all learning outcomes, time constraints, and the possibility of faculty resistance) and other more practical concerns regarding large classes  (e.g., preparatory workload and class size) (Remmen and Frøyland, 2014; Wurdinger and Allison, 2017). However, we challenge this thinking and advocate that large classes by virtue of size are conducive to socialised experiential learning as they naturally provoke a repertoire of non-crafted social experiences and power relations within and between learner communities that would be useful for experiential learning and would

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enrich students' learning journey, in a broader sense. This requires us to move beyond

psychology-based interpretations of experiential learning to sociological approaches to

experiential learning

The most obvious sociological quality of a larger class is that it tends to have a more

diverse body of students (Maringe and Sing, 2014; Woollacott et al., 2014). Larger classes

may consist of a greater mix of 18-year old home students and mature students, as well as

international students, and could potentially have students from a much wider variety of

socio-economic backgrounds adding to the classroom's social diversity. In fact, the larger

the class the more likely its social network would consist of a wider range of communities

thus further transcending the narrower local context the institution is located in. Thus, a

larger class would provide a fundamentally different experience in terms of the number of

communities, the diversity of communities, and the opportunities for social mobility of its

students.

**Benefits of Large Classes from a Social Network Perspective**

**The Class as a Social Network**

Social network theory (SNT) is an umbrella term for a set of philosophically diverse

sociological theories which hold in common a view that the society, in which we the actors

live in, is a composite of myriad complex, layered and multi-dimensional social interactions

which daily formulate and re-formulate the social fabric of our society (Moreno, 1947; Floyd

and Woolridge, 1999; Mutch, 2002; Uzzi et al., 2007). The interactions among the actors

result in a complex, composite net of actors/interactions that form this social network.

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However, these interactions among the actors require much work for the net to be maintained; thus the idea of the net-work (Latour, 1999). In social networks, the points where the interaction threads cross denote the individuals (also known as nodes) within the network and the lines that bind two nodes denote the social interactions, i.e. the continuous work individuals commit to maintain the network. These interactions between actors (nodes) are labelled ties. Nodes and ties are the main building blocks of a social network.

The university class from a social network perspective is perceived as a social network, a social microcosm (Cooper and Robinson, 2000; Hirschy and Wilson, 2002; Choudry et al., 2017). It consists of individual students who interact continuously with each other every-time they meet in the classroom and make a myriad of social micro-decisions in every lecture and seminar. They choose whom they sit with, whom they say hello to, have a joke with, send an e-mail to, befriend on WhatsApp, or share a video with on TikTok. Eventually, these interactions determine whom the student will collaborate with or learn from. The sum of these decisions forms a social network of interrelated individuals with all the social drama and micro-politics that such social networks generate. These informal, social interactions are a fundamental aspect of the students' learning experience (Terrion, 2006) and extend far beyond the confines of the university space and well into the personal and professional lives of our students.

To deepen our understanding of social behaviour among members of communities within the class context, we adopted and adapted Hirschman's conceptual framework (1970), which originally intended to explain conflict, loyalty and group affiliation in groups,

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to the class context. Hirschman (1970) suggests that people naturally enter groups, whether

that is a community of practice, a political party, a business or any other group. All such

groups end up facing a crisis, where the members of the group perceive the particular group

to be in decline or not that the group is not reflecting what they thought they joined thus it

is not providing the benefits expected by the members who joined in. Hirschman (1970) is

quite agnostic himself with regards to the origins of the crisis. His main suggestion is that

human beings are irrational and eventually shift allegiances, perspectives and thoughts,

often without an apparent rationale or reason. For Hirschman (1970) there is always an

inevitable divergence between the group and some of its individual members and each

person has to make a choice: either exit the community or voice their concern about the

direction the community is taking. Exit would mean departing the particular community or

disengaging with the other members of that community. Voice would mean expressing

dissatisfaction within the community and thus coming potentially in conflict with the norms

and routines of that community.

   According to Hirschman (1970) there is an important moderating factor that affects this

binary choice: loyalty (how committed a member is to a particular community). Loyalty in

turn is affected by a number of factors including availability of choices (are there other

communities to enter or is this group a monopoly?), emotional resonance to the aims of the

group (does this group align itself to a noble cause one is committed emotionally to, or is it

just a casual membership?), and commitment of resources so far (for example; if it was very

hard to enter a particular social group it would be far less likely to choose exit as a strategy),

and importance of this group to the individual's life (the more important it is the less likely

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the individual chooses exit). Exit, voice, and loyalty affect the behaviour of individuals within their communities and the way these communities operate within the social network of the class.

In this work, we will examine three particularly important SNT dimensions in the context of large classes: strength of ties, centrality, and population size.

The first dimension describes the intensity of ties between two nodes (actors). When two individuals interact frequently/less frequently with each other, their tie is strong/weak (Granovetter, 1973). There are occasions where two nodes do not interact at all and thus they have no ties to each other. A community is a set of individuals who exhibit a relatively high level of interactions to each other and are, thus, characterised by strong ties. Weak ties are usually exhibited by individuals who traverse communities and may have interactions with individuals who are not part of their main community. Granovetter (1973) in his seminal article argued that weak ties are as important if not more important than strong ties as it is through weak ties that an actor can get information that may be dissonant to the knowledge within the actor's main community. Thus the information flowing from weak ties becomes an opportunity for an actor to expand their understanding and knowledge of the world.

The second dimension, centrality, measures the extent to which a particular actor is central in a particular network (Russo and Koesten, 2005). The concept of centrality suggests that in each social network there are individuals who are more central, or more influential, within a particular group, community, or network (Farmer and Rodkin, 1996; Russo and Koesten, 2005). A large population would most likely consist of multiple communities, and

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within each community there will be individuals with a high number of strong ties, the core

members of that community who occupy a central position (Choudry et al., 2017) while

individuals in the periphery tend to exhibit weaker ties to the centre (Granovetter, 1973)

but also tend to have ties to other communities.

This idea of centre and periphery is fundamental in social network theory and is quite

well illustrated in the communities of practice literature (Powell et al., 1996; Orsmond et al.,

2013; Pyrko et al., 2019). The core of a community of practice is the centrally located group

of individuals who influence the practice, structure, culture and norms of that particular

community (Brown and Duguid, 1991; Brown and Duguid, 2001; Brown and Duguid, 2002).

Core members are spending much of their time interacting with other members of the

community, iterating and re-iterating the norms of that particular community of practice.

The individuals on the boundary of a community are less bound by the centre's core

norms and beliefs and are thus more open to other communities which may exist around

them, and may even belong to the boundaries of more than one community (Maglaughlin

and Sonnenwald, 2005; Gulati, 2007). Sytch and Tatarynowicz (2014) argued that such

individuals located in the periphery of the community can act as bridges between

communities precisely because they reside on those boundaries between communities and

have formed weak ties across communities. An individual with a high number of weak ties

can be seen as a networker and has the potential to become an embodied bridge between

communities (Gulati, 2007). This centre-periphery dynamic within a social network is a

result of time, positioning, actor personality and social propensity.

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The third dimension is that of social network size. Larger populations, in comparison with smaller ones, lead to a higher number of communities of practice and a greater variation among these communities (Onnela et al., 2011). The same would apply in a classroom setting: the larger the population of students and the more numerous the communities of peers formed within the class, communities that can be very influential in the students' levels of learning and overall well-being (Nichols and White, 2001; Choudry et al., 2017).

The issue of population size is particularly relevant when there is a social conflict within a population. Conflict from a social network perspective is among social groups and it can occur either within a community or among communities (Labianca et al., 1998; Hafner-Burton and Montgomery, 2006). Correspondingly, conflict can be seen as the voicing of members' discontent within a particular community, or as conflict because of the contrarian values between two different communities. In either case, conflict tends to be weaker when the population is larger.

Conflict can result in composition shifts among various communities as students may enter and exit these communities. Whole communities may disappear as students exit from a community to form new communities. In a large student population, fewer people notice (or even care) when a student or a group of students exit a community as a result of conflict. Conversely, because it is easier to leave a community in a large class context, the ties within each community are looser, making loyalty less intense among members of that community, thus discouraging the formation of powerful cliques within the classroom. When there is conflict among communities then a large population would dilute the impact of that conflict and provides much needed buffering for the members of the communities

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involved. Thus, conflict and voice, mobility and loyalty are all affected by population size

with individuals as well as communities developing a range of qualitatively different social

behaviours in larger classes compared to smaller classes.

It is important to note here that all three SNT dimensions discussed above are relevant to

all modes of delivery of large classes (i.e. face-to-face, blended, online) where social

networks can be formed. For example, there is an extensive literature of internet-based

social media and their impact on learning and teaching (for a review see: Kofinas et al.,

2016) and their impact is contingent on the same dimensions of social network theory that

are relevant to offline classes namely network centrality, relative strength of ties, and size

(Akyol and Garrison, 2008; Garrison, 2016).

**Positive Features of a Large Class Size**

These three SNT dimensions, seen from the lenses borrowed from Hirchsman's

conceptualisations (1970), underlie the pedagogic advantages of large classes in facilitating

socialised experiential learning. In this article we are examining three pedagogic advantages

that large classes may lead to:

1.      Enhancing students' freedom to Learn

2.      Allowing for diversity of socio-political interactions

3.      Facilitating meaningful experiential learning

These positive features will be analysed in more detail below.

**1.  Students' Freedom to learn**

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The learning communities that students form to study and learn together are very influential for the students' experience and performance in the Higher Education environment. Larger classes tend to have more communities and greater diversity, allowing for a wider choice of peers for students to learn with, and a higher permeability across communities. The existence of diverse choices allows for a healthier expression of exit and voice for members of student communities when they perceive a crisis within a particular student community. The existence of choice has impact on the student's freedom to learn on their own terms and choose the peers they would feel comfortable to learn with (Macfarlane, 2016).

In a smaller class there would be more urgency in joining a community and once joining it, it would be much harder to exit. There are two arguments why it would be harder for learners to exit a community in a small class setting: i. each of the core student communities would be disproportionately influential within the classroom and ii. the cost of exiting the group is high, making the impact of loyalty as a moderating force higher even if the student is dissatisfied with the particular community. As a consequence, students in small classes tend to be more engaged but at the same time there is a higher risk that they will voice discontent and engage in conflict, and if they do the impact can be much higher. In general, smaller classes do not allow for the full range of the social dynamics of voice, exit and loyalty to play out. The high cost of exit thus leads to a repression of individual freedom. We would like to share two anecdotes to illustrate the issue at heart:

On February of 2018 I (the first author) had a class of second year undergraduate students. They were only seven students and it was a second year undergraduate direct

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entry for a February starting point. The February cohorts in my university tend to be smaller

compared to the October cohorts of the main recruitment cycle. This particular group

consisted of five students from the same overseas country and two other international

students. What we observed soon after the classes started was the formation of a very

particular social micro-cosmos, depicted in Figure 1. One of the five students was

marginalised by the other four who formed one group (1,2,3,4). The marginalised student

(7) was female while individuals 1-4 were three males and one female. At the same time the

remaining two international students formed a second group (5,6). Figure 1 represents the

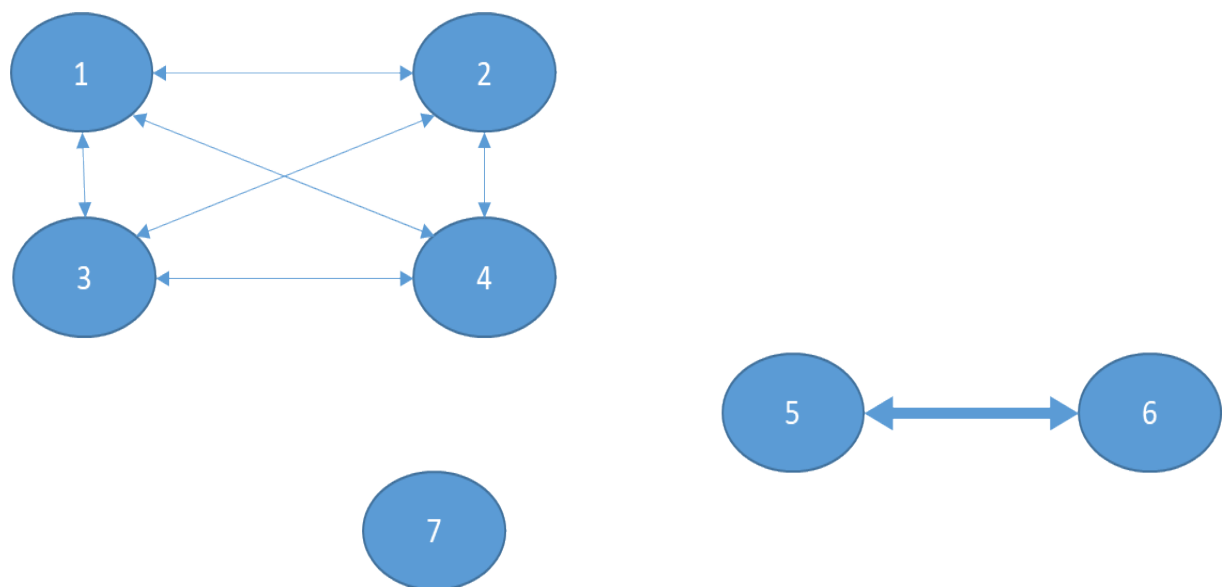social network within the classroom as we experienced it.



*Figure 1: The social network within the class for the February cohort 2018*

My teaching team attempted numerous times and across different modules throughout

that year to intervene and integrate the sole student. However, any such efforts consistently

fell apart. It was only when these seven students joined the more populous third year

October cohort when this student finally found a learning community to join. Unfortunately,

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that student was marginalised for a whole academic year and there was no community

within the class that she could have joined; resulting in a poor student experience.

The second anecdote comes from an experience I (the first author) had in 2015 with a

large class of 110 students during an introductory business unit. We had designed a six-days

long competition which all students had to take part in. In total we had 13 self-selected

teams composed of 6-8 students each, the majority of them formed along friendship

networks. The competition consisted of seven activities and points were given for each

activity. The activities were diverse by design and tested a range of skills and abilities,

making it very difficult for a single group to dominate all seven activities. When a top-

performing team of highly competitive students faced defeat (i.e. did not finish first) in the

first two activities of this competition, the experience led to a crisis within the team. The

crisis culminated to the ostracism of one of the members of the group immediately after the

competition finished. This was a multi-cultural, mixed-gender, mixed age group and yet this

particular student was singled out. In subsequent conversations with the student, it seemed

that the team held her responsible for the defeat because she did not apparently pull her

weight in the group. We struggled to understand the team's logic, as independent observers

we felt that this student was very able and competent. What made the team's decision even

more interesting was the fact that we had designed the competition with the very particular

intent that no team would dominate on all activities. This student's ostracism by the group

seems to have been the unintended consequence of the intended design of our assessment

regime! Nevertheless, the class was very large and the ostracised student was able, within a

couple of weeks, to join another community. That relatively seamless exit from one

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community to another would have been impossible in the example of the seven students'

class presented earlier.

Thus, in smaller classes the dominant communities exert a disproportionate influence in

the class's social dynamics, potentially leading to a toxic environment. In contrast, in large

classes there is more fluidity with regards to the learning communities formed, because

there is choice and greater variation in the types of communities formed. Consequently,

each community is less influential and there is much less potential for a dominant

community to be formed. A related advantage of large classes, as illustrated by the

anecdotes above, is the opportunity for students to temporarily opt out of joining a

community or exit a community and enter another, making it less likely that the exit of a

student from any particular community would lead to permanent isolation and

marginalisation. Students are thus afforded space to experiment and to learn socialising

within and across groups with less severe penalties when they experience failure. Any

conflict, voice, or exit are diluted by the sheer size of the class's social network. This

property of larger classes could be particularly suitable for students with an introverted

disposition and a slower approach in establishing relationships with peers.

## 2. Diversity of social interactions

Beard and Wilson (2018) viewed learning as a holistic process and maintained that when

designing learning experiences, the educator must consider the space, emotions, senses and

levels of challenge. Experiential learning occurs through the interaction between the

learner's inner world and the outer world. In large classes, the educators can rely to some

extent on the more diverse student body to help them deliver to students a wider and richer

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sense of space, emotions, and challenge. In large classes the learner is exposed to a larger, more diverse pool of communities and at the same time this exposure is less threatening to a student's social and personal identity because any particular individual or community only have a diluted impact within the class. There is social space for students to absorb the existence of "others" without feeling the immediacy brought on by a more intimate smaller class. It is this exposure to the "others" in the social microcosm of the class that really bridges the personal, experiential learning with social learning, a social learning experience that large classes are a better context to deliver. At the same time, in a larger class it is far more likely for a student to find peers who are similar to the student. Thus, the discerning educator can provide students with experiential learning that enables Kolb's reflective process of experiential learning to occur with more control over the social context because as any resulting conflicts between communities would not be as intense nor as immediate.

The pedagogic literature suggests that deep learning happens in liminal spaces (Meyer and Land, 2003), in moments where individuals are pushed out of their comfort zone because they have encountered a new experience. For experiential learning to occur these novel experiences need to be reflected upon and the lessons to be absorbed by the learner (Game and Metcalfe, 2009) otherwise the learner risks losing the opportunity to learn from them (Argyris, 1994). However, the literature acknowledges that exposure to a new experience is challenging and stressful (Meyer and Land, 2003; Hawkins and Edwards, 2013); such liminal encounters with a new experience require us to accept that our current state of knowledge is insufficient to accept and absorb novel information or novel encounters. If we

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were to absorb this novel encounter and learn from it we have to accept that part of our

past self has to "die", must be left behind (Kofinas, 2018).

Applications of Kolb's learning cycle often seem to dismiss the fear that exposure to new

experience may generate, the shadowy side of experiential learning (Clancy and Vince,

2019). Each such encounter with the unknown may be tinged with fear, the fear for the

infinite possibilities the novel experience could hurl us towards (Fawver, 2013; Asma, 2014).

This is the extreme sublime (Kavanagh and Kelly, 2002), an aesthetic experience described

as so intense that our cognitive capacity cannot readily absorb (Knox, 1936; Kant,

1952/1790; Cochrane, 2012), thus prompting the individual to invent new ways to

cognitively subjugate it (Kant, 1952/1790; Fawver, 2013).

The Higher Education experience can often be seen as an experience of the liminal

(Kofinas, 2018), and thus an opportunity to enter these liminal spaces of learning (Meyer

and Land, 2003), an unsettling space for students who try to absorb new knowledge often

presented in new contexts. However, one thing that is rarely highlighted in the literature is

the liminal experience of encountering the "other" student. Exposure to the "other" student

is often described in the positive language of the diversity management literature. However,

exposure to different kinds of people during the university experience can be difficult and

threatening (Cooper and Robinson, 2000; Farmer et al., 2018a).

This line of thinking suggests that as an educator one of our primary concerns should be

to increase opportunities for students to experience a range of "others" within the

classroom context and to facilitate the continuous expansion of our students' social circle of

acquaintances within the class (van den Berg and Cillessen, 2015) while ensuring that

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conflict among diverse "others" is minimised. This dialectic is best dealt in the context of larger classes and puts much faith in the assertion that the more populous the weak ties across the communities within a population the healthier the knowledge flows across the population (Granovetter, 1973) and thus the higher the level of knowing across the whole population. Such an approach would lead to meaningful, socialised experiential learning for our students.

To illustrate this point, I wish to share my experience (the first author) as a Masters of Business Administration (hereinafter MBA) student in the Years 2000-2 where the educators' 'invisible hand' shaped my socialised experiential learning as a student. The lessons I gained as a student then still inform my pedagogy and management style decades later as an educator. During the first year as a student in my two-years MBA programme all modules were compulsory and there was a great range of team-based assessments. Almost every single one of the 15 modules in the first year of the MBA had a team-based assessment. This team-work was completed by teams of students, whose composition was designed by the faculty staff. We were informed that the team allocations were engineered to ensure that, at least on paper, the teams were of equal strength, multi-cultural, with mixed age and gender distribution and composed of diverse academic backgrounds. During the first term of the MBA, I found this team-based work very frustrating, a feeling shared amongst the vast majority of my peers.

However, there was a moment towards the end of the second term where it dawned on me that I had gained something invaluable: I had reached a point where I did not mind (or care) anymore whom I was working with. I have reflected much on that sudden realisation I

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had in the Spring of 2001, all those years ago. There was a clear method behind the

pedagogic approach deployed by the educational designers of my MBA experience. I

realised upon reflection that by the time I graduated I had developed three powerful social

skills:

     i. Social Flexibility: once I found myself in a team I was able to start

       building meaningful working relationships with my team-mates

       regardless of the specific character and background of each team

       member.

     ii. Social Awareness: by the end of the first year I was aware of a much

       greater diversity of individuals and I had acquired an expanded social

       awareness of other cultures and ways of thinking.

     iii. Interpersonal Evaluation: I was able to evaluate people beyond a

       simplistic friendships-based judgement. I could see the strengths and

       weaknesses of other people regardless of my personal feelings

       towards those same people. Now whenever I have the luxury to form

       my own teams I am a bit more intelligent, slightly more discerning in

       the way I form teams, and I think I am able to make judgements that

       are based on more objective criteria, beyond friendship or personal

       feelings.

All these social skills were developed as a result of the intelligent use of a large cohort's

size and diversity. With every additional team work, our social network management skills

were strengthened as we formed more and more weak ties. The learning was social and

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experiential and was not solely linked to the contents of each module, it included social

learning through which we, the students, met the learning objectives and achieved the

expected knowledge acquisition. This kind of social, and yet highly experiential, learning

would have been much harder to design in a smaller class due to the potential lack of

diversity and the smaller volume of students.

### 3. Meaningful, Experiential Learning

Large classes offer the possibility for powerful innovations in learning and teaching which

can provide meaningful experiential learning for the students, the educator, and external

stakeholders such as organisations and businesses.

From a student's perspective, large classes provide opportunities for insightful and

meaningful group work. For example, students can learn much from their peers in an

environment of social, group-level competition/cooperation. A large class offers a much

more conducive environment for such group-level competitive activities as a certain degree

of anonymity reduces the psychological pressures such competition may generate and can

facilitate help-seeking behaviour (Karabenick, 2003). In small classes, competition as a

means for learning is rendered meaningless because the competitors are familiar to each

other and there is a lack of incentive to compete. In large classes, with many communities

present the pressure is minimised and the opportunities for forming weak ties and powerful

learning experiences via instances of peer-to-peer competition/cooperation can be

enhanced.

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An example from our own teaching experience (the second author) has been the running of experiential learning exercises for a large-size cohort, which generated data on student performance outcomes. The cohort was engaged in a large lecture every week and numerous smaller-size tutorials. In an expatriate assignment, I adopted a "who to hire" role play exercise where student groups served as a selection panel to discuss their ranking of five candidates with different cultural backgrounds, experiences, educational qualifications, and skills for an expatriate post. The experience had an element of competition for the teams involved. Through a systematic collection of data from 5 groups in each of the 8 tutorials, I was able to share the decision making results from a total of 40 teams with the whole cohort in the lecture to drive students' deeper thinking on expatriate selection criteria.

The size and wealth of information was only possible due to the fact that this was a large cohort. The learning from the experience of their peers has been motivational for the students, and equally beneficial to me because I could quickly assess the effectiveness of the exercise design using the 'big data' generated by the large cohort. This viewpoint is echoed by Stork's research (2003) where using student data for teaching, especially in courses that are considered technical or 'dry', brings relevance to the students' learning. In her course, student survey data were first collected in a large class and were used for teaching statistics. As a result, teaching evaluation in terms of innovation received a higher rating and student feedback and performance were favourable.

Furthermore, From an educator's perspective, a large class offers a great opportunity to test various pedagogical strategies. With a well-established research design, the educator

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can test out the efficacy of a teaching intervention with the support of statistical data. When

the effectiveness of a new teaching intervention varies year by year, it is more difficult to

find out the causes of variance in a small-size cohort than in a large one. The potential

richness of data collected from a larger-size cohort can help the educator determine what

approaches and learning strategies would work for different communities within the

student population (Maringe and Sing, 2014). Large classes better represent the student

population, providing more confidence in generalisability.

An example from our own teaching experience (the second author) has been the design,

implementation, and evaluation of a gamification project (Tsay et al., 2018). I led a module

that focuses on developing student employability with twelve team members to around 170

students. The module had problems of limited contact hours and low student engagement.

Therefore, I decided to create a motivational online learning system through gamified

elements such as time-bound challenges, freedom to fail, freedom of choices, progression,

points, leader-board, and badges. From analysing data of student demographics,

engagement in the online learning activities, and assessment performance, I found that

student engagement was positively related to course performance, after controlling for

gender, attendance, and prior performance. In addition, female students participated

significantly more than in online learning activities than male students, and students with

jobs engaged more than those without jobs.

A larger class makes the teaching experience more interesting for the educator as they

are exposed to the social dynamics of a complex social environment and can observe the

variety of naturally-emerging social interactions and peer-to-peer learning opportunities

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among students in the class.  With the findings from the gamified project, I (the second author) was able to refine the gamified learning system and implemented it for another year to diversify design choices that better suit the needs of different student communities and to improve the overall engagement level of the whole cohort (for more details please read: Tsay et al., 2020).

Finally, a large class is an important asset when attempting to provide authentic opportunities for engagement with businesses. An interesting example of authentic, experiential learning comes from our own experience with live business projects, a well-known vehicle of experiential learning which is often utilised by business schools (Kofinas et al., 2018). From a broad learning perspective, the students' performance is not as relevant as is the experience as a source of reflective thinking and experiential learning. However, if we aim to offer authentic business experiences as an experiential learning opportunity to our students (and businesses) then students' performance should be evaluated (Keogh et al., 2007) in terms of usefulness to the business. Delivering value to a business should be important for us the educators.

Thus, when a business offers a live project for students to engage with then the educators of a large class can feel reasonably confident that at least one of the student teams could deliver a satisfactory output to the company. There are two reasons for this confidence: firstly, larger classes have a greater diversity of students and thus it is far more likely that there will be individuals within the class that will have the knowledge and skills to contribute positively to the performance of the student groups (McKeachie, 1980) thus providing outputs that would be meaningful and helpful to the business. Secondly, the

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educator of a large class is afforded with the luxury of allocating multiple teams to work

with a single business thus multiplying the chances that at least one of the teams will

provide value to the business (Keogh et al., 2007).

**Practical Implications: The Role of the Educator in Large Classes**

The Higher Education system has its origins in the apprentice model of the early

universities. Kolb's ELT, which exerts a strong influence in the sector, provides strong

theoretical foundations for an individualised, psychology-based mode of learning which

centres around the single learner. Our main argument has been that educators can leverage

the size and diversity of large classes to facilitate socialized experiential learning, which can

supplement the more individualised psychology-based learning. However, socialized

experiential learning requires a pedagogic shift, a difference in perspective among the

educators. The shift from a psychological perspective in learning and teaching to a

sociological perspective requires a different kind of training for educators (Farmer et al.,

2018a). In fact, Vince (1998) suggested educators should develop the capacity to 1) accept

and to engage with emotions for their self and other, 2) work with the complexities of

power, and 3) work both with individual experience and the translation of experience

through a social context of collective thought and shared assumptions. If the educators do

not shift their approach from psychology to sociology then we often witness the emergence

of an unwritten contract between educator and students where the large classes effectively

become "easier", less interactive, and less engaging (Cooper and Robinson, 2000; Messineo

et al., 2007).

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This has implications with regards to the kind of pedagogy we as educators must practice.

For example, the importance of facilitating exposure and understanding of diverse social

communities for our students is fundamental from a social networks perspective: weak ties

expose learners to other communities on the periphery of the communities they belong to.

From the educator perspective this interplay of centre and periphery is where rich

experiential opportunities lie for learners at a social level and large classes should be used

for precisely that purpose: providing opportunities for students to learn from experiential

exposure to a greater variety of "other" ways of thinking (Game and Metcalfe, 2009).

Formative assessments would need to be designed to leverage the social dimensions of the

class while summative assessments should favour group-work and social-level experiential

learning instead of exams, and/or other solitary summative assessments.

The educators, whether they realise it or not, have disproportionate power to shape the

social dynamics within a class (Hirschy and Wilson, 2002; Farmer et al., 2018a; Clancy and

Vince, 2019). The educator's 'invisible hand' (Farmer et al., 2018a) needs to be yielded

intently, self-reflectively, and carefully if we are to accomplish our duties as educators and

do justice to our students' education. For example in online learning environments, the

educators' 'invisible hand' is expressed via the crafting of an interactive learning

environment and the immediacy of response to students' needs and requests (Appova and

Arbaugh, 2018; Arbaugh, 2018). In large classes, the educators must yield their influence

towards managing the social dynamics in the class and facilitating in their students a social

conscience and a more reflective approach towards their social interactions within and

outside of the class. Essentially, large classes require a shift in thinking; away from a focus

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on individuals to facilitating the learning of the whole class at a social level in order to

develop a socially aware and reflective cohort (Farmer et al., 2018b).

A simple example of the mental shift required by educators can be exerting discipline in

the class setting. Much of the literature that advocates that large classes are not

pedagogically beneficial advocates so from a perspective of instructor's control on the

process of students' knowledge acquisition in class (for examples: Carbone, 1999; Hornsby

and Osman, 2014; Broadbent et al., 2018). In small offline classes, classroom discipline tends

to be a limited problem while in larger classes discipline can become an issue. However, in

small classes the principles of psychology dominate while in larger classes the educator

must seek recourse in sociology, social networks theory and socialised approaches to

learning in order to manage class discipline. Where in a small class the educator may be

dealing with 10 or 20 students in a class of a 100 students the educator may be dealing with

10 to 15 communities of students. Thus s/he should adjust toward seeing discipline in class

as a matter of social dynamics amongst student communities and the management of the

core centres in each of these communities.

It may be worth sharing a personal anecdote to illustrate this point: in the Autumn of

2010 I (the first author) was teaching a large class of a 110 students. The classroom had an

amphitheatre shape with the seats slightly staggered upwards as they extended further

towards the back. And on the third row from the end there was a lively group of students

from the same cultural background chatting noisily. The first time I noticed them I used my

usual method of silencing a group of students; I looked rather intently and intensely at the

individual student who, I suspected, was the main influencer of the group. He saw me

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looking at him and the raucous behaviour stopped, for ten minutes. Then it resumed. I had

clearly misunderstood the social dynamics of that group. I focused on the second student

who was also quite lively. The noise stopped again, for ten minutes… Then it resumed. I was

clearly missing something.

I went home and, following the precepts of experiential learning, I reflected on my

actions and ultimately on my failure to manage that group of students. I thought

continuously for the whole week, the failure gnawing my mind. I theorised on the

interactions among the community members, reflected on who were the core members and

who were on the periphery. I reflected on the way the members were positioned, and

wondered what could I glean about their social dynamics from their behaviours?

Next time in class I discretely observed the group's behaviour while they were quiet.

Mentally, I drew a map based on behaviour and seating arrangements of all the members of

that community and drew a mental image of their boundary. The group consisted of eight

students, seven male students and one female student distributed on 2 rows. I did a double

take. A realisation dawned on me, the previous week I had not paid attention to the female

student! I do not mean that I had not noticed that she was part of the group. What I mean is

that I had not noticed that the female student's inclusion in the group was significant for the

social dynamics of the group. I realised I had not paid attention to her positioning for two

reasons: the first was the female student was quiet whenever this group became noisy, the

second reason was because she was female. These students were all of the same, male-

oriented culture and yet the female student was seating in a central position within that

particular community. Social network theory suggests that the relative location of the actors

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to each other reveals their role in the social network. She had been all but invisible to me the week before even though she was seating in a central position within the group! Thus, the female student was probably the main influencer in the group. I realised I made a couple of cultural and potentially gender-based assumptions; namely I had not expected that the "leader" of that particular cultural community would be female…

Soon enough, I noticed that the female student made a couple of quiet comments to her neighbouring male student to the right. Soon after, the group started getting noisy again. By which time, the female student went quiet, looking very well-behaved indeed. Satisfied, I realised that the resolution was quite simple: a stern, focussed look at the influencer in the group. Once the main influencer in that community realised she was noticed, she gave a quiet nudge to her neighbours and the whole group quietened down. The class was never disturbed by that particular group of students again.

This is an example from an offline setting of learning and teaching of the shift required. However, we would argue that the shift to social experiential learning applies to all modes of teaching of large classes, including online. If anything in online delivery the educators are even more of a facilitator of the context within which these social interactions take place.

**Conclusion**

In this work we have sought inspiration from our own reflections as educators and practitioners to argue in favour of large classes as legitimate tools for social experiential learning. Large classes due to their social network size confer three distinct advantages for social experiential learning: i) they offer more freedom for students to learn in their own

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terms, ii) they allow for a greater diversity of socio-political interactions and iii) they have a

higher potential of facilitating meaningful experiential learning. Thus, we are suggesting that

Kolb's reflective cycle is not occurring in a contextual vacuum and socialised learning has its

place in experiential learning. In that respect, we are in agreement with Kayes' argument

(2002) that the individualised experiential learning is interlinked with socialised learning.

However, we are extending this into education and argue that we, as educators, are actually

in a position to manage socialised learning and to use creatively large classes as the context

within which to facilitate social, experiential learning.

In other words, our thesis is not meant to negate the need for an individualised

psychological perspective on experiential learning nor to argue that all classes should be

large classes. Rather, we are in agreement with Cuseo (2007) that there is a need to mix

large and small classes in the same way that there is a need to mix types of assessments,

and types of learning for our students. However, we depart from Cuseo's thesis (2007)

regarding the reasons why we argue in favour of large classes. Large classes need not be

seen as an imposition nor as a practical necessity. They are an important pedagogical tool

on its own right and can facilitate social experiential learning which would enhance further

our students' learning journeys.

**Reference List**

Akyol Z and Garrison DR. (2008) The Development of a Community of Inquiry over Time in an online
        Course: Understanding the Progression and Integration of Social, Cognitive and teaching
        Presence. *Journal of Asynchronous learning networks* 12: 3-22.
Appova A and Arbaugh F. (2018) Teachers' Motivation to learn: Implications for Supporting
        professional Growth. *Professional development in education* 44: 5-21.
Arbaugh JB. (2018) One Bridge,(at Least) Two Paths: Reflections on "Virtual Classroom
        Characteristics and Student Satisfaction in Internet-Based MBA Courses". *Journal of
        Management Education* 42: 524-532.

32

Argyris C. (1994) Good Communication that blocks Learning. *Harvard Business Review* 72: 77-85.

Arnold N and Paulus T. (2010) Using a Social Networking Site for Experiential Learning: Appropriating, Lurking, Modeling and Community Building. *The Internet and Higher Education* 13: 188-196.

Arvanitakis J. (2014) Massification and the Large Lecture Theatre: from Panic to Excitement. *Higher Education* 67: 735-745.

Asma S. (2014) Monsters on the Brain: An Evolutionary Epistemology of Horror. *social Research* 81: 941-968.

Beard C and Wilson JP. (2018) *Experiential Learning: a Practical Guide for training, coaching and education*: Kogan Page Publishers.

Broadbent J, Panadero E and Boud D. (2018) Implementing Summative Assessment with a Formative flavour: a Case Study in a Large Class. *Assessment & Evaluation in Higher Education* 43: 307-322.

Brown JS and Duguid P. (1991) Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation. *Organization Science* 2: 40-57.

Brown JS and Duguid P. (2001) Knowledge and Organization: A Social-Practice Perspective. *Organization Science* 12: 198.

Brown JS and Duguid P. (2002) Local Knowledge: Innovation in the Networked Age. *Management Learning* 33: 427.

Carbone E. (1999) Students behaving badly in Large Classes. *New Directions for Teaching and Learning* 1999: 35-43.

Choudry S, Williams J and Black L. (2017) Peer Relations and Access to Capital in the Mathematics Classroom: A Bourdieusian Social Network Analysis. *British Journal of Sociology of Education* 38: 1037-1053.

Clancy A and Vince R. (2019) "If I Want to Feel My Feelings, I'll See a Bloody Shrink": Learning From the Shadow Side of Experiential Learning. *Journal of Management Education* 43: 174-184.

Cochrane T. (2012) The Emotional Experience of the Sublime. *Canadian Journal of Philosophy* 42: 125-148.

Cooper JL and Robinson P. (2000) The Argument for making Large Classes seem Small. *New Directions for Teaching and Learning* 2000: 5-16.

Cullen JG. (2011) The Writing Skills Course as an Introduction to Critical Practice for Larger Business Undergraduate Classes. *International Journal of Management Education* 9.

Cuseo J. (2007) The Empirical Case against Large Class Size: Adverse Effects on the Teaching, Learning, and Retention of first-year Students. *The Journal of Faculty Development* 21: 5-21.

Dean KL and Wright S. (2017) Embedding Engaged Learning in High Enrollment Lecture-based Classes. *Higher Education* 74: 651-668.

Exeter DJ, Ameratunga S, Ratima M, et al. (2010) Student Engagement in very Large Classes: The Teachers' Perspective. *Studies in higher education* 35: 761-775.

Farmer TW, Dawes M, Hamm JV, et al. (2018a) Classroom Social Dynamics Management: Why the Invisible Hand of the Teacher matters for Special Education. *Remedial and Special Education* 39: 177-192.

Farmer TW and Rodkin PC. (1996) Antisocial and Prosocial Correlates of Classroom Social Positions: The Social Network Centrality Perspective. *Social Development* 5: 174-188.

Farmer TW, Talbott B, Dawes M, et al. (2018b) Social Dynamics Management: What Is It and Why Is It Important for Intervention? *Journal of Emotional and Behavioral Disorders* 26: 3-10.

Fawver K. (2013) *The Terror of Possibility: A Re-evaluation and Reconception of the Sublime Aesthetic,* South Florida: University of South Florida.

33

Floyd SW and Woolridge B. (1999) Knowledge Creation and Social Networks in Corporate Entrepreneurship: The Renewal of Organizational Capability. *Entrepreneurship Theory and Practice* 23: 123.

Game A and Metcalfe A. (2009) Dialogue and Team Teaching. *Higher education Research & development* 28: 45-57.

Garrison DR. (2016) Community of Inquiry. *E-Learning in the 21st Century.* Routledge, 40-52.

Granovetter MS. (1973) The Strength of Weak Ties. *The American Journal of Sociology* 78: 1360-1380.

Gulati R. (2007) Tent-Poles, Tribalism, and Boundary-Spanning: The Rigor-Relevance Debate in Management Research. *Academy of Management Journal* 50: 775 - 782.

Hafner-Burton EM and Montgomery AH. (2006) Power Positions: International Organizations, Social Networks, and Conflict. *Journal of Conflict Resolution* 50: 3-27.

Hawkins B and Edwards G. (2013) Managing the Monsters of Doubt: Liminality, Threshold Concepts and Leadership Learning. *Management Learning* 46: 24-43.

HESA. (2019) *What do HE Students study?* Available at: https://www.hesa.ac.uk/data-and-analysis/students/what-study.

Hirschman AO. (1970) *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*: Harvard university press.

Hirschy AS and Wilson ME. (2002) The Sociology of the Classroom and its Influence on Student Learning. *Peabody Journal of Education* 77: 85-100.

Hornsby DJ and Osman R. (2014) Massification in Higher Education: Large Classes and Student Learning. *Higher Education* 67: 711-719.

Kaneko K, Saito Y, Nohara Y, et al. (2018) Does Physical Activity enhance Learning Performance?: Learning Effectiveness of Game-based Experiential Learning for University Library Instruction. *The Journal of Academic Librarianship* 44: 569-581.

Kant I. (1952/1790) *The Critique of Judgement,* Oxford: Clarendon Press.

Karabenick SA. (2003) Seeking Help in Large College Classes: A Person-Centered Approach. *Contemporary educational psychology* 28: 37-58.

Kavanagh D and Kelly S. (2002) Sensemaking, Safety, and Situated Communities in (con)temporary Networks. *Journal of Business Research* 55: 583-594.

Kayes DC. (2002) Experiential Learning and its Critics: Preserving the Role of Experience in Management Learning and Education. *Academy of Management Learning & Education* 1: 137-149.

Keogh K, Sterling L and Venables AT. (2007) A Scalable and Portable Structure or conducting Successful Year-long Undergraduate Software Team Projects. *Journal of Information Technology Education: Research* 6: 515-540.

Knox I. (1936) *The Aesthetic Theories of Kant, Hegel, and Schopenhauer,* New Jersey: The Humanities Press.

Kofinas A. (2018) Managing the Sublime Aesthetic when communicating an Assessment Regime: The Burkean Pendulum. *Management Learning* 49.

Kofinas A, Al-Shawbkek A and Lim A. (2016) Critical Success Factors of Using Social Media as a Learning Tool in Higher Education. In: Benson V, Saridakis G and R. T (eds) *Analyzing the Strategic Role of Social Networking in Firm Growth and Productivity.* IGI Global.

Kofinas A, Romanova A and Ahmed S. (2018) Coping Cycle and its importance when designing an Assessment: Reflections on the Learning Process,. *Learning, Teaching & Student Experience 7th Annual Conference.* Glasgow, United Kingdom: Chartered Association of Business Schools (CABS).

Kolb DA. (1984) Experience as the Source of Learning and Development. *Upper Sadle River: Prentice Hall*.

34

Labianca G, Brass DJ and Gray B. (1998) Social Networks and Perceptions of Intergroup Conflict: The Role of Negative Relationships and Third Parties. *Academy of Management Journal* 41: 55-67.

Laru J, Näykki P and Järvelä S. (2012) Supporting Small-Group Learning using multiple Web 2.0 Tools: A Case Study in the Higher Education Context. *Internet and Higher Education* 15: 29-38.

Latour B. (1999) On Recalling ANT. In: Law J and Hassard J (eds) *Actor Network Theory and After.* Oxford: Blackwell Publishers, 15-25.

Lave J and Wenger E. (1991) *Situated Learning. Legitimate Peripheral Participation,* Cambridge: Cambridge University Press.

Macfarlane B. (2016) *Freedom to learn: The Threat to Student Academic Freedom and why it needs to be reclaimed.*: Routledge.

MacNab BR. (2012) An Experiential Approach to Cultural Intelligence Education. *Journal of Management Education* 36: 66-94.

Maglaughlin K and Sonnenwald DH. (2005) Factors that impact Interdisciplinary Natural Science Research Collaboration in Academia. *International Society for Scientometrics and Informatics (ISSI).* 499–508.

Maringe F and Sing N. (2014) Teaching Large Classes in an increasingly Internationalising Higher Education Environment: Pedagogical, Quality and Equity Issues. *Higher Education* 67: 761-782.

McKeachie WJ. (1980) Class Size, Large Classes, and multiple Sections. *Academe* 66: 24-27.

Messineo M, Gaither G, Bott J, et al. (2007) Inexperienced versus Experienced Students' Expectations for active Learning in Large Classes. *College Teaching* 55: 125-133.

Meyer J and Land R. (2003) *Threshold Concepts and Troublesome Knowledge: Linkages to Ways of Thinking and Practising within the Disciplines,* Edinburgh: University of Edinburgh

Moreno JL. (1947) Organization of the Social Atom. *Sociometry* 10: 287-293.

Mutch A. (2002) Actors and Networks or Agents and Structures: Towards a Realist View of Information SNicystems. *Organization* 9: 477.

Nichols JD and White J. (2001) Impact of Peer Networks on Achievement of High School Algebra Students. *The Journal of Educational Research* 94: 267-273.

Onnela J-P, Arbesman S, González MC, et al. (2011) Geographic Constraints on Social Network Groups. *PloS one* 6: e16939.

Orsmond P, Merry S and Callaghan A. (2013) Communities of Practice and Ways to Learning: Charting the Progress of Biology Undergraduates. *Studies in higher education* 38: 890-906.

Park M, Jeong M, Lee M, et al. (2020) Web-based Experiential Learning Strategies to enhance the Evidence-based-Practice Competence of Undergraduate Nursing Students. *Nurse Education Today*: 104466.

Powell WW, Koput KW and Smith-Doerr L. (1996) Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology. *Administrative science quarterly* 41: 116.

Pyrko I, Dörfler V and Eden C. (2019) Communities of Practice in Landscapes of Practice. *Management Learning* 50: 482-499.

Remmen KB and Frøyland M. (2014) Implementation of Guidelines for Effective Fieldwork Designs: Exploring Learning Activities, Learning Processes, and Student Engagement in the Classroom and the Field. *International Research in Geographical and Environmental Education* 23: 103-125.

Reynolds M. (2009) Wild Frontiers—Reflections on Experiential Learning. *Management Learning* 40: 387-392.

Russo TC and Koesten J. (2005) Prestige, Centrality, and Learning: A Social Network Analysis of an Online Class. *Communication Education* 54: 254-261.

35

Seaman J. (2008) Experience, reflect, critique: The End of the "learning cycles" Era. *Journal of Experiential Education* 31: 3-18.

Stork D. (2003) Teaching Statistics with Student Survey Data: A Pedagogical Innovation in Support of Student Learning. *Journal of Education for Business* 78: 335-339.

Sytch M and Tatarynowicz A. (2014) Exploring the Locus of Invention: The Dynamics of Network Communities and Firm's Invention Productivity. *Academy of Management Journal* 57: 249-279.

Taylor S. (2018) Forming Character in Business School Leadership Education: Rejoinder to "The Development of Leader Character through Crucible Moments". *Journal of Management Education* 42: 301-305.

Terrion JL. (2006) The Impact of a Management Training Program for University Administrators. *Journal of Management Development*.

Tsay CHH, Kofinas A and Luo J. (2018) Enhancing Student Learning Experience with Technology-mediated Gamification: An Empirical Study. *Computers and Education* 121.

Tsay CHH, Kofinas AK, Trivedi SK, et al. (2020) Overcoming the Novelty Effect in Online Gamified Learning Systems: An Empirical Evaluation of Student Engagement and Performance. *Journal of Computer Assisted Learning* 36: 128-146.

Uzzi B, Amaral LAN and Reed-Tsochas F. (2007) Small-world Networks and Management Science Research: A Review. *European Management Review* 4: 77.

van den Berg YH and Cillessen AH. (2015) Peer Status and Classroom Seating Arrangements: A Social Relations Analysis. *Journal of experimental child psychology* 130: 19-34.

Vince R. (1998) Behind and beyond Kolb's Learning Cycle. *Journal of Management Education* 22: 304-319.

Wagner III JA and Van Dyne L. (1999) The Large Introductory Class as an Exercise in Organization Design *Journal of Management Education* 23: 123-142.

Wenger E. (1998) *Communities of Practice,* Cambridge: Cambridge University Press.

Woollacott L, Booth S and Cameron A. (2014) Knowing your Students in Large Diverse Classes: a Phenomenographic Case Study. *Higher Education* 67: 747-760.

Wurdinger S and Allison P. (2017) Faculty perceptions and use of experiential learning in higher education. *Journal of E-Learning and Knowledge Society* 13.

36