

We Need To Talk About Competitions: a theoretically flawed EE intervention?

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Questions we care about (Objectives)

There *is* a push by policy makers for the introduction of entrepreneurship education at an ever-earlier age, and ‘competitions’ and ‘competitive pedagogy’ are the most visible interventions in this endeavour. But why *are* competitions offered up to educators as a model of good practice and an effective entrepreneurial learning method? Why are they prescribed, dispensed and consumed regardless of differences in social, cultural and economic context? What might the unintended consequences be for students, teachers, schools and even wider society? Is it possible that the outcome for some children is the same as that which has been observed to occur in competitive sports, with winners experiencing a sense of achievement and entitlement, while losers feel disengaged and de-motivated? It has been argued that entrepreneurship education can be considered a success if it dampens unrealistic expectations and fulfils a type of ‘sorting’ according to aptitude and ability (Von Graevenitz et al., 2010). Does this argument still have relevance when such ‘sorting’ is introduced in secondary or primary education? Or if such ‘sorting’ reproduces disadvantage and social inequality?

Approach

The authors adopt a realist logic of enquiry to reveal and critique the underlying programme theories inherent in the use of competitions in entrepreneurship education, using European policy and guidance as a theatre of study. The approach involves isolating and testing the theories which underpin their use to better understand whether the *taken-for-granted* assumptions and benefits that underlie the rollout and adoption of competitions are justified.

Results

The process of making the underlying programme theories explicit, and comparing these to evidence from within and beyond entrepreneurship education demonstrates inherent theoretical flaws in the assumptions that competitions will ‘work’ for all. Some of the most prevalent intended outcomes – that competitions will motivate young people; that they will enable young people to develop entrepreneurial skills; and, that young people will be inspired by their peers – are challenged by theory and evidence from other fields.

Implications

Competitions constitute one of the most visible and widely recommended elements of entrepreneurship education strategy and practice for schools across Europe. This paper illustrates that they may produce perverse outcomes – reducing certain groups’ interest in pursuing the discipline, diminishing motivation, constraining entrepreneurial learning and reinforcing social inequality.

Value/Originality

This work uses a realist logic to shed new light on entrepreneurship education’s most recognisable format – the competition – in order to provide a richer, more sophisticated and critically enlightened picture to those promoting and practicing its use.

Key Words – Entrepreneurship Enterprise Education Competitions

Introduction:

Realist Evaluation is a species of theory driven evaluation (Pawson and Tilley, 2004), which is increasingly being harnessed by researchers wishing to throw more light on why complex social interventions work (or don't). Realist evaluation is about 'theory testing and refinement'. That is, it always 'returns to the core theories about how a programme is supposed to work', and from this viewpoint interrogates '...is that basic plan sound, plausible, durable, practical and, above all, valid?' (Pawson and Tilley, 2004).

This paradigm offers a potential route to approaching a number of weaknesses highlighted with entrepreneurship education research. Practices and programmes are handed down to entrepreneurship educators with little questioning of the assumptions and the taken-for-granted benefits which underpin their use (Fayolle, 2013). Also, not enough interest is taken in investigating possible explanations for contradictory results, nor in relating entrepreneurship education to literature and theory from psychology and education (Fayolle, 2013).

Policy makers and practitioners are more likely to be able to interpret and utilise *explanations* of *why* an intervention may (or may not) work better in one context or another, rather than trying to make decisions based on statistics, effect sizes and an array of moderators (Pawson et al 2015). It is this explanatory power which attracts these authors to realist evaluation as described by Pawson (2006). A crucial element of this approach is grounded in identifying theories which support (or refute) explanations of why complex interventions may (or may not) work in different circumstances and, as such, it can be seen as a way of exploring and identifying potential dangers which may be lurking in complex interventions – for example, in entrepreneurship education competitions in primary and secondary schools - and where extra vigilance is needed (Pawson et al, 2005).

Standards for realist review and synthesis are being developed to specify the steps and appropriate methods, just as they exist in systematic reviews (Wong et al, 2016). But scientific realism and its philosophy, principles and methods, can also be adopted and adapted as a 'broad logic of enquiry,' applied in a flexible, interpretative and iterative fashion and tailored to specific tasks, for example, isolating and investigating a particular policy (Pawson, 2006). It is in this way – isolating and testing the theory of competitions in entrepreneurship education - that we harness a realist logic of enquiry. In the next section we describe competitions in entrepreneurship education, their ubiquity and status as a favoured element of provision *and* a pedagogy in their own right.

A rationale for EE in primary and secondary schools

Entrepreneurship Education is a term which describes curricula and activities which aim to develop entrepreneurial competence, understood here as a combination of knowledge, skills and mind-sets which support learners' personal development and prepares them for a more successful transition into the job market as an employee or as a self-employed person (European Commission, EACEA/Eurydice., 2016, Bacigalupo, M. et al, 2016). Whilst Entrepreneurship Education (EE) is the term most used in European policy and guidance, the term has a symbiotic relationship with enterprise education, where 'knowledge, skills and attitudes developed in one area can influence the development of specialized knowledge, skills and attitudes in the other area' (Jones et al, 2014). Besides the instrumentalist outputs of EE (e.g. more & better performing firms, more jobs, and ultimately a more successful economy), the arguments in favour of EE in primary and secondary schools have increasingly gravitated towards the relationship between soft skills and success in later life (Heckman & Kautz, 2012, Brunello & Schlotter, 2011 Duckworth & Yeager, 2015). Essentially, the development of such skills provides a wider justification for the existence of EE beyond that based on economic utility (Pittaway & Cope, 2007), or ideology - where EE is conceived as a device "to instill a deep and lasting commitment to free-market principles in the minds, habits, dreams and ambitions of young people everywhere" (Sukarieh & Tannock, 2009). Self-perception,

motivation, perseverance, self-control, meta-cognitive strategies, social competencies, resilience/coping and creativity constitute the list of non-cognitive skills particularly associated with a wide range of positive outcomes in adult life encompassing personal (wellbeing, satisfaction with life), social (sense of belonging) and economic spheres (employability, earnings, job satisfaction) (Gutman & Schoon, 2013). Hence, public authorities have been willing to invest considerable amounts of taxpayers' money in programmes that purportedly enhance this set of soft skills, and arguably, “inspire and prepare young people to succeed in a global economy” (JA 2008a, 2 in Sukarieh & Tannock, 2009), as entrepreneurship education aims to do.

Competitions: A favoured vehicle to promote EE in primary and secondary schools.

Competitions are, perhaps, the most visible method and activity in EE. They are presented as an effective prescription in enterprise education (Hooley, 2016) and a pedagogic principle in Business Planning Competitions (Watson and McGowan, 2016). They are organised discretely during Global Entrepreneurship Week,¹ provided by charities through mini-company programmes² and promoted by influential stakeholders as the answer to social and economic woes.³ Indeed, ‘compete and pitch’ is a practice which has become synonymous with entrepreneurship education, with traditional start-up methods (business or idea planning, pitches, competitions, events), adapted and applied ‘across all levels of education’ (Komarkova et al, 2015).

Competitions are seen in EE as a “pedagogical method that goes beyond formal classroom teaching”, incorporating, for example, “network events and interaction with entrepreneurs (Souitaris et al., 2007 in Nabi et al, 2016) acting as coaches and/or judges.’ The active participation of entrepreneurs and representatives from the world of work and business in these events has led some authors to characterise competitions as a paradigmatic and widespread example of school-mediated employer engagement (Mann and Kashefpakdel, 2014).

Competitions are mainly a team-based endeavour with two processes apparently at play: intragroup cooperation and intergroup competition. Teams of young people compete within and between schools to develop proposals for a product or service, or implement these ideas, with performance to be judged ultimately in a competition (Mann & Kashefpakdel, 2014).

Typically, competitions are rolled out over a variable period of time with researchers distinguishing between ‘short term challenges’ and ‘longer term competitions’. (Mann and Kashefpakdel, 2014). The short term ‘Enterprise Challenge’ has previously been described as the most frequent and popular way of developing enterprise in schools (McLarty et al, 2010), and this model persists in the perceptions of secondary school teachers as a pedagogy synonymous with enterprise education (Mann et al, 2017). Whilst the definition of Enterprise Challenge days does not explicitly refer to competition, the professional experience of these authors (involvement in entrepreneurship and enterprise education in England and Spain at all levels of education), is that such activities are structured competitively. For example, a year group will undertake an idea development simulation (design a healthy snack brand, design a technology for the future, design an app etc) which climaxes in one team being judged the ‘winner’ at the end of the event.

The longer-term competition method is epitomised by the mini-company format. Often facilitated by external providers, the purpose of mini-company programmes is to develop students’ entrepreneurial mind-sets through small scale real economic activity (European Commission, 2015).

¹For example, the GEW Get in the Ring Competition - <https://getinthering.co/partners/global-entrepreneurship-week/>

²For example, The Value of Investing in Entrepreneurship Education and in particular mini company programmes in schools - <http://content.ee-hub.eu/EE-HUB/National-Policies/Research-on-the-impact-of-the-JA-Company-Programme>

³Sir Anthony Seldon ‘Schools need to be like Dragons Den’ - <https://www.thesun.co.uk/news/2538979/schools-should-be-like-dragons-den-to-prepare-them-for-the-21st-century-says-sir-anthony-seldon/>

The Junior Achievement Young Enterprise (JA-YE), Company Programme is the most widespread example of this format. This particular intervention features extensively in European policy as an example of good practice and its promoters describe the model as a five-step process, the final step being ‘competing and closing’(<http://coyc.jaeurope.org/about/ja-company-programme.html>). Indeed, ‘competition’ has been a core element in JA-YE format since its foundation in 1919. One of its founders describes JA programme as “a work project in such a manner that its execution resembles a competitive sport and thus it becomes a game” (JA 1921a in Sukarieh & Tannock, 2009).

But, is there a possibility that competitive entrepreneurship education can have the same effects which have been observed in competitive sport – the activity is enjoyable and motivating for winners, but counter-productive for those who don’t experience early success (Orlick, 1974)? Given the widespread promotion of competitions in entrepreneurship education, this is a possibility which warrants much exploration. The realist logic enquiry in this paper is one possible line of exploration, with ‘theory’ being the unit of analysis.

Methodology:

Why is the realist paradigm useful when exploring the effects of social programmes? Should policy makers not, after all, take a positivist approach, and make decisions about entrepreneurship education programmes and interventions based on the results of experiments, Randomised Control Trials (RCTs) and systematic reviews? It is some time since Hargreaves (1996), argued for an education profession modelled upon evidence-based medicine, with centralised organisation of educational research so that findings were developed cumulatively (Boyask, 2016). Such approaches have been espoused in education as the route to ‘evidence based practice’ (Goldacre, 2013), with a charity - the Education Endowment Foundation,⁴ - set up in 2011 with the sole purpose of using RCTs as an evaluation strategy for programmes targeted at disadvantaged young people. Conformity to this ‘what works?’ agenda in schools, and the limited methodological tools adopted by the Education Endowment Foundation suggests the scientific paradigm may have ‘won out’ (Boyask, 2016), in promotion terms at least. But average effect sizes alone fall short of explaining the variability in these effects across a treatment group (Bryk, 2015). What is at stake for practitioners and policy makers is “understanding variation in educational outcomes” and therefore responding effectively to these variations, for example by eliciting answers to questions such as: does the preparation of teachers explain the variation in outcomes? Is the impact any different depending on the type of school implementing the intervention? Might the intervention work better for some types of students but not others? (Bryk, 2015). This last question is critical. In medicine, it is recognised that every treatment may cause a potential adverse reaction in a subject, and these side effects are described to patients. There seems to be no equivalent effort to provide such explanations in ‘evidence based education’, with treatments being described purely in terms of their benefits, and with little attention paid to the harm they might cause for different participants (Zhao, 2017).

The realist paradigm can help support such an endeavour, as it represents a movement away from synthesising ‘what happened’, and towards theorising ‘why it happened’ based on the reasoning of participants, understanding that it is *this* reasoning which provides the most helpful insights to inform policy and practice (Jagosh, 2017).

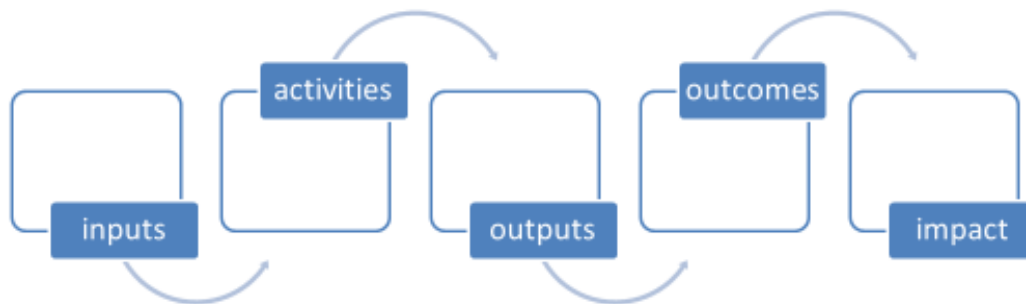
Defining key realist concepts:

Programme theory:

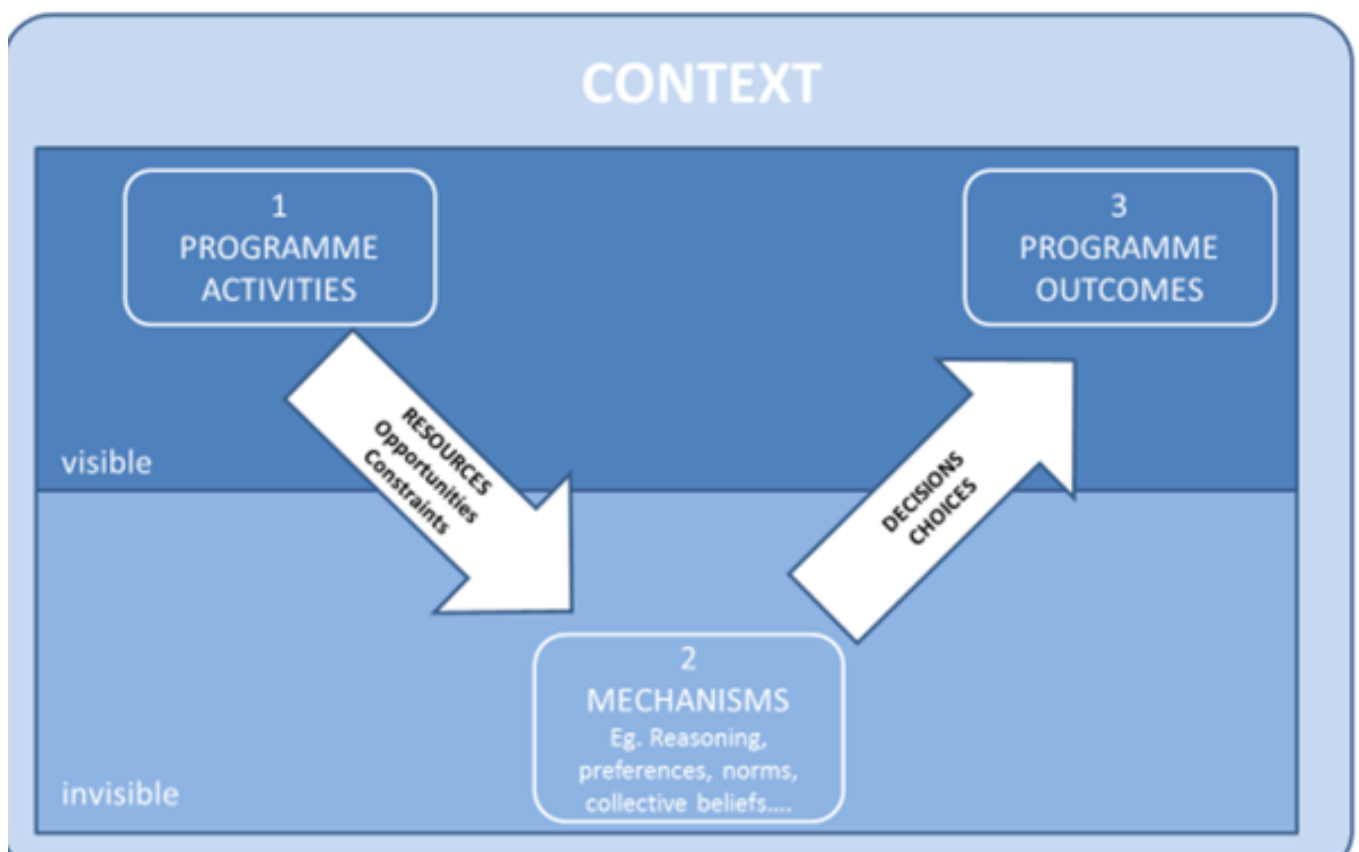
⁴ <https://educationendowmentfoundation.org.uk/about/history/>

This is the theory about what a program or intervention is expected to do and in some cases, the theory about how it is expected to work. The theory which may underpin the use and propagation of a particular intervention is rarely described (Pawson, 2006), and interventions are ‘handed down’ to practitioners with the theory *implicit* in the organisation of the programme. A key task of the realist is to make this theory explicit.

Standard approach to ‘theory of change’:
‘Do this and you’ll get this...’ rationale.



Realist approach to ‘theory of change’:
‘Do this....and explore and explain why different participants will have different outcomes’ rationale.



Context:

This concept describes the features of the conditions in which programmes are introduced that are relevant to the operation of the programme mechanisms (Pawson & Tilley, 2004), such as cultural norms, the history of the community and participants, the nature and scope of existing social networks, geographic location effects, differences in resources and funding. Context can thus be broadly understood as any existing condition that triggers and/or modifies the behaviour of a mechanism” (Wong et al., 2013).

Mechanism:

Mechanisms are underlying entities, processes, or structures which operate in particular contexts to generate outcomes of interest. In realist ontology, mechanisms are ‘the agents of change’ and describe how the resources embedded in a program “influence the reasoning and ultimately the behaviour of program subjects” (Pawson & Tilley, 2004). They are generally hidden, sensitive to variation and generate outcomes/outcome patterns (Wong et al., 2013).

Outcomes:

Outcome-*patterns* comprise the intended and unintended consequences of programmes, resulting from the activation of different mechanisms in different contexts (Pawson & Tilley, 2004). The consideration of Context-Mechanism-Outcome (CMO) configurations is one of the fundamental ways that realist evaluation differs from other approaches. Realism first acknowledges that social programmes and interventions will have distinctly different outcome patterns in different contexts and for different people (Greenhalgh et al, 2015). The ontology and epistemology of realism offer policy makers and practitioners involved in designing, delivering and evaluating complex social interventions, a philosophy and method which *better aligns knowledge with reality* (Jagosh, 2017). Realist ontology, has *depth* (Jagosh, 2017); it is a search for that which cannot be observed, which is difficult to measure, but which *actually* determines why, and in what circumstances, socially contingent programmes work (or not).

A criticism of realism is that its adaptive, iterative nature, make it hard for others to understand the process of research (Pawson and Tilley, 2004). Jagosh (2017), suggests the best counter to this is transparency and that researchers should describe what they did as clearly as possible.

Phase 1 – Virtual Knowledge Cluster

The initial phase of the research developed as a result of the authors’ shared curiosity in the widespread promotion of competitions, having practically observed their perverse outcomes for some learners. A Virtual Knowledge Cluster evolved (Passiante and Secundo, 2002), with ‘learning conversations’ (McLean, 2011) taking place almost daily via e-mail. Academics and practitioners involved in on-line dialogue with co-authors and project partners will recognize the practical elements of such of a process, including knowledge retrieval, transfer, and creation; as well as the qualities of such interactions – autonomous commitment, trust and a ‘creative chaos’ which encourages participants to ‘transcend existing boundaries to define and solve problems’ (Passiante and Secundo, 2002). Initially, conversations revolved around swapping experiences, anecdotes, research papers and ideas for research paradigms and methods. These conversations included a thread about shared misgivings on the popularization of RCTs as a method for evaluating complex educational programmes. The lived experience of the authors reflected that one programme might ‘work’ in one setting, but not transfer well as a result of any number of contextual factors which would vary from one programme (and person) to another. This thread led to the development of an idea to harness the logic of realist evaluation (a counter to the RCT paradigm), to explore competitions.

Phase 2 – Identifying the theatre of study

Realism rules no data out – any policy, guidance, materials, primary data from programmes, websites, snippets of conversation and gossip can help ‘develop a greater understanding of the causal forces which might give rise to viewpoints’ (Shearn, 2017). Pawson acknowledges this opportunity to study everything can lead researchers to become overwhelmed by data; therefore,

identifying a focus is crucial. These authors reflected that the European Commission (EC) had been a consistent promoter of EE, with significantly less divergence and hiatus in overall policy, priority and resourcing than have national governments. The EC also offers a significant library of policy and guidance, starting from the Oslo Agenda (EC, 2006), and including recent work on pedagogies by the European Joint Research Centre (EC JRC 2015), providing a significant, but contained, theatre of study through which the use of competitions could be explored.

Phase 3 – Data Extraction from European Policy and Guidance

European policy documents from 2006 to 2016 were studied,⁵ searching for the inclusion of competitions, contests, prizes and awards. Where these terms existed, the context of their inclusion was logged and direct comments collated, analysed and coded.⁶ At this stage, nineteen categories were identified which related to an implicit benefit or outcome of competitions in entrepreneurship education.⁷ Interim outcomes, which could reasonably be assumed to be observed by educators, were isolated for testing against evidence from other fields. The rationale here was twofold – first, Guskey (2002), states that it is the result of observing positive change in students that motivates educators to continue with a practice or innovation. By this logic, if competitions are a negative experience for their students, an educator may well lose interest in EE more broadly. Second, it might also be reasonably assumed that if the intended interim outcomes and benefits of an intervention are not fulfilled (motivation for example), then the longer-term outcomes which are assumed to follow are also less likely to be fulfilled (Lackéus, 2016) - the chain of logic breaks down and the benefits intended to cascade from individual, to community and society do not materialise. An initial presentation of this part of the investigation (mining and coding the categories, and identifying literature and theory from other fields which challenged the claimed benefits of the use of competitions), was presented in a working paper at the Institute for Small Business and Entrepreneurship 2016 conference (Culkin, Brentnall, Diego, 2016).

Phase 4 – Fieldwork to socialise the investigation

Following this initial study, a number of opportunities were developed to socialise the implications with educators. This included sharing the study with teachers already involved in the development of entrepreneurship education, discussing informally with colleagues/academics in the field, and presenting at a conference. This experience at the National Enterprise Education Conference (2016), is worth recounting, as only a couple of slides into the presentation, a participant (a secondary school senior leader), interjected how they had witnessed first-hand the potential perverse outcomes of competitions (with a group of secondary pupils competing against other, more socially advantaged schools, which left pupils feeling out of place and disenchanted). During this comment, other workshop participants nodded vigorously and went on to share personal stories which had resulted in feelings of reticence towards competitions and their outcomes. Recurring comments/themes are summarised below, with references which further explore the phenomena which educators described. These interactions generated two insights: it exposed a gap between what experienced enterprise educators felt they believed enterprise was, and what it could be about - broader and more inclusive conceptions as described by Lackéus (2015) and Rae (2010) - and how it revealed they felt their colleagues perceived EE (The Apprentice, Dragons' Den, private values colonising public life). In particular, the use of competitions *was* problematic for practitioners and an intense discussion took place about their use in primary and secondary education. This discussion exposed the desire for a sense of scholarship and ownership over EE. Educators described frustration at the outsourcing of enterprise to external providers, and the narrow focus on competitions and start up. They wished colleagues perceived EE as a method for enhancing the curriculum, but felt that this was a long way off. Such insights are important for those who value entrepreneurship and enterprise in education to receive and consider. Previously,

⁵Appendix 1 – EU policy and guidance studied

⁶Example of data extraction chart from Paris paper.

⁷Appendix 2 – Categories identified about the stated value of competitions in EU policy

practitioners and policy makers inside entrepreneurship education might have thought of their field as a ‘poor cousin’ in education and learning, somewhat neglected, but perceived to be of some value. This field work illuminated that for many the metaphorical relative was not a ‘poor cousin’, but rather a ‘repugnant uncle,’ considered at turns to be ludicrous and revolting by educators’ colleagues, and towards whom they themselves even felt reticent.

	Critical themes expressed by educators:	Theme reflected in:
Values	“Competitions are out of step with the values of young people, who are more inclined to want to work together to make a difference.”	Broadbent et al (2017), Generation Z, What the world’s young people think and feel. Lackéus (2015b), Two Flavours of Entrepreneurial Education – happiness empowerment versus meaningful creativity.
	“Competitions don’t sit well with educators, who view them as part of a wider, failing, neo-liberal system which normalises inequality and selection.”	Peters (2001), Education, enterprise culture and the entrepreneurial self: A Foucauldian perspective. Holmgren and From (2005), Taylorism of the Mind: entrepreneurship education from a perspective of educational research.
Outcomes	“Competitions are de-motivating for losers.”	Good, T. L., & Brophy, J. E. (2008). Looking in classroom (10 th ed.). Boston: Pearson Education. Deci and Ryan (1985), Intrinsic motivation and self-determination in human behaviour.
	“A ‘competition’ means you ‘step in’ more – the focus is on ‘getting it right’ rather than learning.”	Ames (1992), Classrooms: Goals, Structures and Student Motivation. Dweck (1986), Motivational Processes Affecting Learning.
	“Competitions are inherently unfair because every student, institution and community has different resources and inclinations to compete.”	Heilbrunn and Almor (2014), Is entrepreneurship education reproducing social inequalities amongst adolescents? Some empirical evidence from Israel. Shindler (2009), Transformative classroom management: Positive strategies to engage all students and promote a psychology of success.

Phase 5 – Learning Conversations continued....

Insights from this fieldwork phase influenced on-going Learning Conversations, which were increasingly focussed on the technical aspects of realism and theory development. The authors joined the RAMESES online community, a group of researchers (spanning health, education and social programmes), which involves realist academic experts who are in daily conversation. Jagosh (2017), advises that realists aim to provide ways of seeing and understanding that cut through existing paradigms and provide common sense explanations of intervention flaws. As a result, the focus became how to communicate the gap between the effects competitions are meant to have, and the effects that were observed in some research studies and experienced in practice.

Phase 6 - Developing a programme theory

In the research to this point, these authors had not located a single Theory of Change specifically built to identify and map out the sequence, hierarchy and relations between key components and the outcomes which ‘competitions’ are intended to generate. In this case ‘the programme *is* the theory’ and policy, guidance, inputs and intervention components must be made explicit to enable a theory to be constructed (Pawson, 2006). Information mined from European policy and guidance was contrasted against generic descriptions and/or diagrams of the way entrepreneurship education is broadly expected to work (McLarty, L., et al , 2010, Braag, S., & Henry, N. , 2011, Williamson, N., et al. ,2013, Young Enterprise, 2014. EC, 2015). These broad entrepreneurship education theories of change were synthesised with the programme theory knowledge generated from EC policy and guidance to create a theory of change for competitions (Figure 1). An alternative theory of change was created, based on theories researched which might test, or refute, the proposed and assumed beneficial outcomes of competitions (Figure 2).

Phase 7 – Considering potential CMO patterns

In realist analysis, Context and Mechanism and Outcome are semi-permeable concepts; they *function* as C, M or O in a *particular part* of the analysis (Westthrop, 2017). The illustration below, developed from a generic example provided by RAMESES community member Westthrop (2017), demonstrates the different function of motivation in a particular part of the analysis of competitions.

- A competition aims to raise students’ motivation (in this case, **motivation is an outcome**).
- A competition aims to increase students’ entrepreneurial skills and works, in part, by raising students’ motivation (in this case, **motivation is a mechanism**).
- A competition will work best for students who already have high motivation (in this case, **motivation is a context**).
- And, of course, there could be the case where a competition aims to raise motivation (**interim outcomes and mechanism**) in order to develop entrepreneurial skills (**higher level outcomes**) and which works best for students with moderate levels of motivation (it wasn’t effective for those who already had high levels of motivation as there was no room for improvement, or for those with the lowest levels of motivation as they needed a different intervention).

The different interim outcome categories identified from EC reports were different contextual and mechanistic factors which could trigger different outcome patterns. But these categories are not fixed, rather they are porous, according to where one is with the analysis. Attempting to identify all CMO combinations is a task which would be not only beyond the scope of this paper, but questionable, *if* it makes the data more difficult for practitioners and policy makers to understand. Figure 3 aims to illuminate, in common sense way, ‘Combinations which may influence outcome patterns for participants in entrepreneurship competitions’.

Results

A review of European policy and guidance shows that though competitions are originally described in the Oslo Agenda as an ‘effective communications activity’, they are, in every subsequent report, described as both part of an EE strategy *and* an example of good practice. Within a decade, the method is qualified as: “a learning form where competitive elements are used in order to achieve better learning outcomes” (EC JRC, 2015). The EC policy and guidance describes the benefits of competitions in EE including that the method is: motivating for students, that students develop entrepreneurial skills, that competitions reward students, and that students are inspired by their peers (Culkin, Brentnall, Diego, 2016).

Figure 1 illustrates a synthesis of the broad theories of change consulted in this study⁸, and the categories of benefits mined from EC policy and guidance (Culkin, Brentnall, Diego, 2016). The

⁸ Appendix 3 – EE Theories of Change.

intervention components and resources are presented as combining to trigger positive individual change, which cascades to organisational, economic and societal outcomes. There is much positive research on the mini-company format which might support such a theory of change, including positive effects on attitudes to entrepreneurs (Johansen et al, 2012), entrepreneurial competence and activity (Johansen, 2011), start-up rates (Johansen, 2010), and attitudes to enterprise (Athayde, 2009, Athayde, 2012).

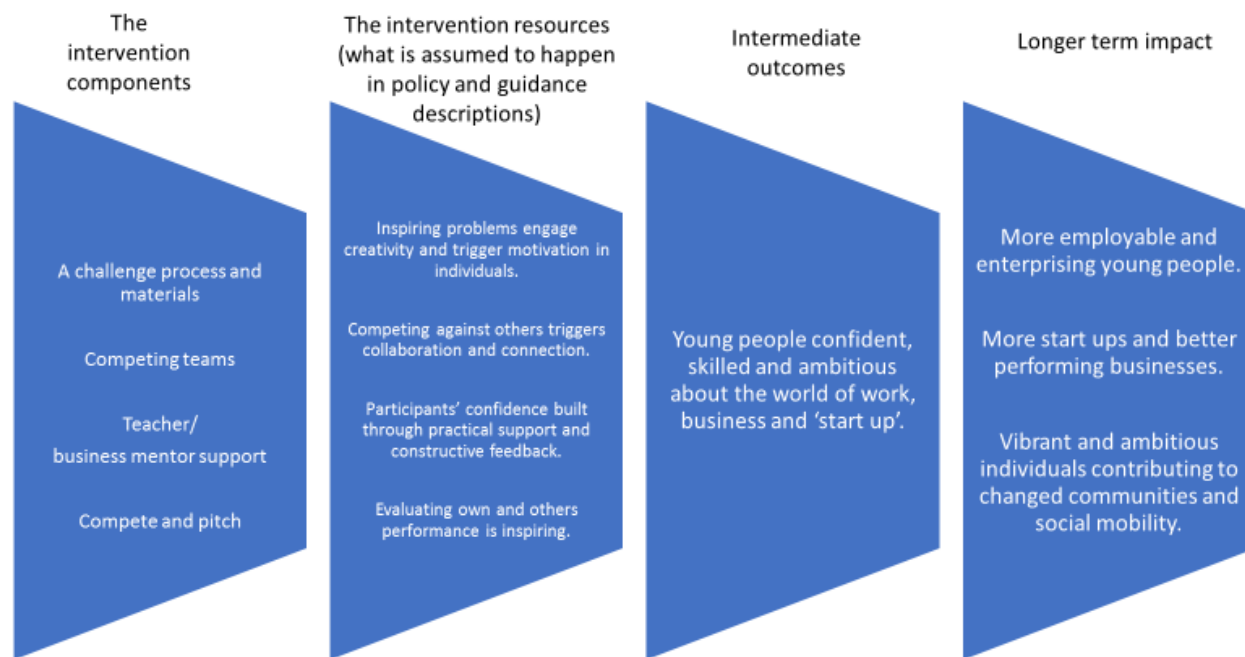


Figure 1 - Conceptualising the programme theory for competitions in entrepreneurship education.

A significant factor to bear in mind is that the Company Programme format is often a voluntary activity. This introduces the possibility of 'Volunteer Bias', an effect (where the nature of the volunteers causes the positive outcome as opposed to the intervention itself) for which it is difficult to create a control (Heiman, 2002, Goldstein et al., 2015, Keiding & Louis, 2016).

Assumptions and unintended outcomes

Figure 2 highlights how the assumptions underpinning the use of competitions can be tested against theory from other fields to explain *why* the intervention may not lead to the expected and hoped for interim outcomes and longer term impact. These theories may help to explain the contradictory results for competitive entrepreneurship processes which have been observed by researchers (Oosterbeek et al, 2010, Huber et al, 2012, Heilbrunn & Almor 2014).

All of these studies described competitive processes where teams of students worked against each other, and ultimately, one would be crowned 'the winner.' Oosterbeek et al (2010), assessed the impact of *compulsory* participation in a leading entrepreneurship education programme on entrepreneurial intentions to be 'significantly negative'. Huber et al (2012) found a slight negative impact on entrepreneurial intention, which declined further over time to be 'significantly negative'. Heilbrunn & Almor (2014), showed a significant positive impact, but when controlling for socio-economic background a different picture emerged. For pupils from low socio-economic environments participation turned out to be counterproductive. These students valued themselves with less self-efficacy and they saw entrepreneurship as less feasible and desirable after participation.

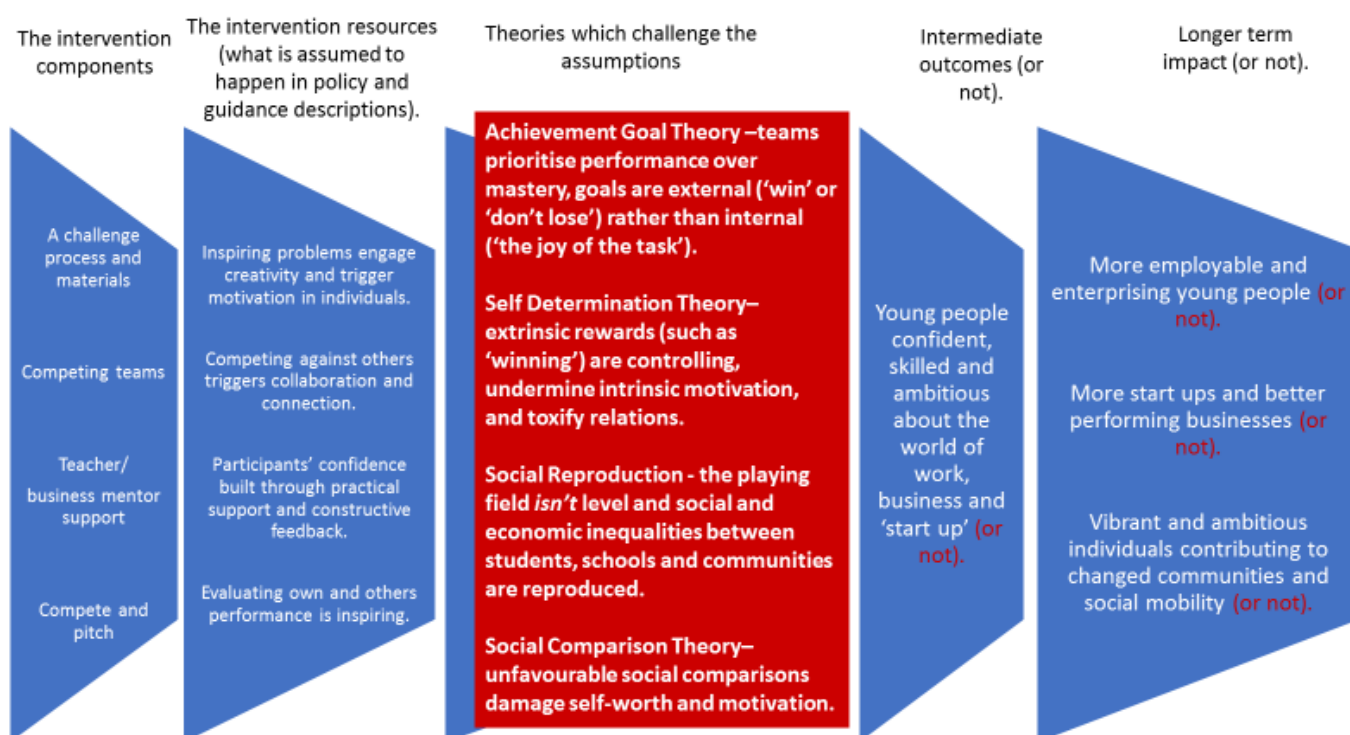


Figure 2 - Testing the programme theory for competitions in entrepreneurship education

Context, mechanism and outcome patterns

Figure 3 presents contextual and mechanistic factors which may combine to create different outcome patterns. It is common sense to consider that poorly resourced students (ones with less personal capability and confidence, less family support, competing as part of a team from a school where resources are constrained and staff time is limited) may have different outcome patterns than those of students in more advantaged circumstances. Considering the personal circumstances and inclinations of students, the level of support they have, and which they can access, and the extent to which the competition results are unmediated or whether students are supported to co-construct a positive meaning from the experience are factors which are important for educators to consider. This figure offers policy makers and practitioners an accessible way of questioning taken for granted assumptions and benefits, and intends to support the extension of the 'evidence -based policy' conversation from 'what works?' towards deeper consideration of 'what works, for whom, and in what circumstances' (Pawson and Tilley, 2004). Educators will be able to imagine, or have practical examples, of contradictions to these initial suggested outcome patterns – the poorly resourced learner who lost but took a positive lesson, the conscript who wins and goes on to be an enthusiastic volunteer. The figure cannot be exhaustive in this way; it exists to communicate outcome *patterns*, as suggested by theory and literature in Figure 2, and to advocate a little more caution is required with regards to the notion that competitions will be 'consistently effective' for every learner.

Winning vs Losing

It should be noted, winning and losing does not appear to be the most significant factor in motivation, at least not in the straightforward 'losers give up' and 'winning is positive' manner one might imagine. The negative effects of failure can be ameliorated by significant, constructive feedback (McAuley & Tammen, 1989, Vansteenkiste & Deci, 2003), to the extent that a loser who experiences significant, constructive feedback can be more motivated than a winner. Equally, winning is not, in itself, necessarily a 'good thing', in that it appears to predict unethical behaviour, as a result of the inflated sense of entitlement winners develop (Ritov & Schurr, 2016). The practical lesson for policymakers and educators is that they should ensure space and time for

reflection and co-construct a positive, and ethical, meaning from competition outcomes.



Figure 3: Combinations which may influence outcome patterns for participants in entrepreneurship education competitions

Family background, gender and socio-economic status

The inclinations of students and the appeal (or avoidance), of competitive pedagogy begins well before any intervention, with family background, gender and socio-economic status shaping: the willingness to compete (Almas et al, 2015); the tendency to align oneself with neo-liberal values (O’Flynn & Peterson, 2007); and an individual’s entrepreneurial identity (Falck, Heblich & Luedemann, 2012). These factors may be important in helping to explain why experiments where an activity was compulsory (Oosterbeek, 2010, Huber et al, 2012), demonstrated negative results.

How well-resourced students are – personally, at school level, family resources and resources of the community – seems particularly significant (and hence, emboldened in the figure above). Being subjected to unfair competition, where one’s social and financial disadvantage is highlighted against better resourced competitors, has been observed to be harmful in entrepreneurship education (Heilbrunn and Almor, 2014) and in education more generally (Good and Brophy, 2008, Shindler, 2009). Considering these factors would help policy makers and practitioners to qualify their policy recommendations, refine interventions and better target programmes.

Relating pedagogy to learning theories

Researchers are exploring the line between the types of pedagogies used in enterprise/entrepreneurship education, their relation to teaching models and learning theories, and different types of impact. Nabi et al (2016), reviewed 159 articles, classifying interventions according to the three archetypal teaching models: 1) the supply model 2) the demand model 3) the competence model. The supply model includes pedagogies related to the ‘transmission and reproduction of knowledge and application of procedures’ (lectures, reading, watching), the demand model involves ‘personalised meaning through participation’ (exploration, discussion, experimentation), and the competence model focuses on ‘active problem-solving in real life situations’ and organising resources into competences that can be ‘mobilised for action.’ The supply model relates to behaviourist learning theories, and the demand and competence models to constructivist learning theories. Nabi et al (2016), reflect that ‘Behaviourism assumes learning is primarily the passive transfer of knowledge from the teacher to the student, while constructivism assumes that learning involves actively participating in the construction of new understanding.’

They suggest that ‘deeper, more experiential pedagogies seem to have the most potential to have impact at higher levels’ (in terms of real entrepreneurial behaviour), because ‘students focus on developing behavioural competency in solving problems in real-life entrepreneurial situations,’ yet they acknowledge that there are contradictory results in impact studies which adopt competency approaches. Their recommendation is that more evaluation and comparative investigation is needed to isolate, explore and compare ‘competence-model-related pedagogical’ methods to better identify specific effects of specific pedagogies.

An entrepreneurship education competitions fallacy?

Reflecting on the classification of experiential learning as a competence based model, one can observe that although competitions *are* an experiential activity (they involve learning-by-doing), this does not necessarily mean they are *experienced* in the way in which constructivist educators intend. Constructivists view learning as ‘problem solving based on personal discovery where the learner is intrinsically motivated’ (Cooper, 1993), whereas, behaviourists view learning as something which occurs via ‘response strengthening’ through rewards and punishments (Moseley et al, 2005). Potentially, herein lies a theoretical contradiction in the use of competitions in entrepreneurship education as the experiential activity to develop intrinsic motivation and skills.

The Oxford English Dictionary defines competition as ‘the activity or condition of striving to gain or win something by defeating or establishing superiority over others’, and ‘an event or contest in which people take part in order to establish superiority or supremacy in a particular area’ (Oxford English Dictionary, 2017). Thus, a competition is a particular type of extrinsic activity which is dependent on beating an opponent/s (Vansteenkiste & Deci, 2003), and involves the exposure to public failure for those who are beaten (Rahal, 2010). There are a number of theories which suggest why such an activity may not lead to increased motivation, the development of skills or social mobility and inclusion.

Self-Determination Theorists (Deci and Ryan, 1985), find that extrinsic motivation (doing something because it leads to a separable outcome), is different from intrinsic motivation (doing something for its inherent satisfaction, fun or challenge). Competitions necessitate measuring one’s own performances against that of others, which can tend to decrease intrinsic motivation (Ames, 1984), and those who lose may feel embarrassed, humiliated or develop a ‘loser’s psychology’, if they lose consistently (Good and Brophy, 2008). In educational research, direct comparisons on the effects of competition with cooperation find in favour of cooperation in motivating achievement in classroom settings (Johnson et al, 1981, Ames, 1984, Ames and Ames 1992).

Achievement Goal Theorists also distinguish between ‘performance goals’ and ‘mastery goals’ and the different ways these concepts influence the development of skills. Central to a performance goal is the idea that one’s *skill* is evidenced by doing better than others, and that this performance is publicly recognised (Dweck, 1986). As a result, learning and skills development is viewed as a way to achieve a desired goal, rather than an end in itself. As a consequence, if considerable effort is invested but does not lead to ‘success’ it can lead to a negative evaluation of competences (Ames, 1992), and disengagement from developing that skill. In contrast, mastery goals focus on the intrinsic value of learning and utilising effort to develop skills and competences (Dweck, 1986, Ames, 1992). Crucially then, a competitive process may incentivise *performance outcomes* to be prioritised over *skill development*. For example, in a group working on a competitive pitch, those who might benefit most from developing presentation skills are least likely to take the lead, despite being in the greatest need of development (McCullough et al, 2016).

Developing the motivation and skills of young people is often quoted on the wish list of enterprise educators, yet this analysis demonstrates the potential flaws in seeking to do this through a competitive process.

Social comparison theory (Festinger, 1954), states that our sense of self is determined by making comparisons between ourselves and others, in order to evaluate ourselves. If a student compares themselves and their performance unfavourably with others, it threatens, not inspires, their self-worth and motivation (Meece, Anderman & Anderman, 2006). This effect is reflected in the findings of Heilbrunn and Almor (2014), who identified the negative impact which participating in regional finals of an entrepreneurship education competition had on students from lower-socio economic backgrounds: “When meeting other groups at regional meetings or at competitions, the pupils from the lower socio-economic background felt underprivileged, backward and less capable.” Psychologists have identified that peer excellence can have the opposite effect of ‘inspiration’ if students believe that their peers’ excellent level of performance is out of their reach. ‘Discouragement-by-Peer-Excellence-Effect’ (Rogers & Feller’s, 2015), challenges the notion that students will *automatically* be inspired by and learn from their peers, if being exposed to their excellent performance makes them feel less capable of performing at the level of those peers.

Finally, given the increased understanding of the negative impacts of inequality on education, health and wellbeing outcomes (Ferguson, H.B. et al, 2007, Wilkinson, R. & Pickett, K, 2009), a researcher’s work might also take interest not simply in whether a programme ‘works’, but question *what* does it work *for* (Biesta, 2007) - for example, acknowledging and exploring the ways in which ‘invisible power’ is imperceptibly reinforced (Foucault & Deleuze, 1977, Foucault, 2008, Peters, 2009). It has been argued that entrepreneurship education can be considered a success if it dampens unrealistic expectations and fulfils a type of ‘sorting’ according to aptitude and ability (Von Graevenitz et al., 2010). However, research in mainstream education has shown that such processes are rarely neutral, and children and young people from lower socio-economic groups are more likely to be failures due to the expectations of others and the opinions and actions of decision makers (Boaler et al, 2013).

Social reproduction (Bourdieu and Passeron, 1977), describes how cultural and social dispositions of the wealthy are recognized and valued by teachers, and how the institutional procedures in education make these children appear brighter and more articulate (Crossley, 2012). Consider a key element of competitions – the public presentation, or pitch. This element represents a litmus test for finalists, but may favour teams from socially-advantaged backgrounds. Patterns of talk and interaction constitute a manifestation of class differences (Bernstein, 1973, Savage, 2015), and elevator pitches and other forms of interaction with the jury mean that socially advantaged teams who have the existing social skills to make the right impression may be more likely to be crowned winners. Reay (2012) asserts that the iniquitous effects of social class in education is a ‘monster that grows in proportion to its neglect;’ paying attention to the contexts and effects of class in entrepreneurship education competitions must be a priority, given the significant claims made in policy and guidance about the social value of entrepreneurship education.

The theories of change which were analysed for this study sighted social mobility and inclusion as amongst the positive spill over effects of entrepreneurship education. Yet the field’s most visible intervention has the potential to have the opposite effects. Shindler (2009) distinguishes between ‘healthy’ and ‘unhealthy’ competitions in two ways. First ‘unhealthy competitions implicitly reward advantaged students’, that is, the resources that advantaged students are able to bring to bear, as individuals, and in terms of school organisation, teacher commitment and family capital, result in a competition which is skewed, and more likely to result in their success. Second, ‘winners are able to use their victory as social or educational capital at a later time’, that is those with existing advantage can ‘consolidate and increase’ their position in relation to others (Van Zanten, 2008). So, an entrepreneurship education competition may be seen as an educational strategy which either constrains or expands opportunity, but it must also be recognised that individuals, families, organisations and communities do not have the same resources to enact such strategies.

Researchers have noted that students from independent schools are over-represented in enterprise competitions (Huddleston et al. 2012; Athahyde, 2012), and a similar picture emerges when looking at the state sector, with grammar school pupils outnumbering alumni of the non-selective sector (Mann, A. & Kashefpakdel, E.T., 2014). It is recognised that entrepreneurship competitions are affected by 'self-selection' bias, meaning "that the pupils with the most developed entrepreneurial skills are probably the ones who apply" (EC, 2016), but the make-up of school-types has a wider significance in terms of the social effects of entrepreneurship competitions. Essentially, entrepreneurship education competitions may enable confident, socially and culturally advantaged young people to gain additional social and educational capital which benefits them further at a later time and in-effect, creates greater disadvantage for their worse equipped peers.

Conclusion:

Fayolle (2013), asserts that the ultimate client of entrepreneurship education is the society in which it is embedded. In relation to competitions then, entrepreneurship educators should consider whether they wish to create a more cooperative future or a more competitive future, and how the design of tasks and activities will serve these different objectives and shape individuals and society.

Competitions may *present* themselves as a reasonable strategy to create fun and drama in the short term, raise awareness of entrepreneurship and engage the private sector, but these perceived benefits may mask long-term detrimental effects. On competition, Shindler (2009), advises educators to use it 'sparingly, and with care', and to approach it in the same way as toxic paint or an electrical power tool: "It can produce beautiful results, but unless we take great precautions we will regret putting it into the hands of young people. If it seems harmless, it is because we do not perceive the threat clearly."

If one accepts that developmental experiences can shape deep beliefs about entrepreneurship (Krueger, 2007), then just as positive experiences arising from competing could be beneficial, negative experiences could be damaging. Making clear this potential harm in the prescribing of competitions is urgent, and necessary. It might also provide the sense of increased credibility wished for by experienced practitioners, and more detailed explanations of practice required by novice practitioners. The sense of scholarship which educators (which these authors met) said they crave may be better catered for through more nuanced recommendations for, and alternatives to, competitions. Describing 'what else' educators could do, in ways which can be understood and enacted with little support (given the time and resource constraint which many educators described themselves operating within), is important, as there is no widely understood and promoted alternative to 'compete and pitch' in entrepreneurship and enterprise education.

As theories of change consulted for this study show, the results expected in the intervention logic of entrepreneurship competitions is broad and staggering: entrepreneurial intent, awareness, entrepreneurial self-efficacy, an astonishing array of soft skills, and an impressive list of medium to long-term outcomes for the economy and society.

Drawing a line between a specific component of entrepreneurship education interventions and an observed outcome is challenging but necessary in order for educational practitioners "to know what forms of activity work, for what purpose, leading to what changes in student behaviour, activity and choice" (Pittaway & Cope, 2007). Let us assume competitions can provide a boost to entrepreneurial intent for some participants; what is it that is causing that reaction? Is it the interaction with employers or entrepreneurial role models? Is it interaction with peers? Is it an excellent facilitator? Is it context or person specific factors? This paper is a first attempt at unearthing, from existing theory and literature, some of the contextual mechanistic factors at play in the competitions process. The authors' aim is to foster a greater sense of caution in recommending

and providing competitions and competitive pedagogies as a primary route to developing entrepreneurial motivation and skills. Kurt Lewin wrote 'There is nothing more practical than a good theory,' (1952). In this case, we hope that exploring entrepreneurship education competitions through a theory-driven realist logic of enquiry provides practitioners and policy makers with insights to influence a re-appraisal of the theoretical assumptions which underpin their recommendation and show that the widespread and uncritical use of competitions may create perverse effects for those individuals and communities whom entrepreneurship educators might most want to benefit.

Appendix 1 – European Policy and Guidance reports on entrepreneurship education in schools, colleges and VET (non-HE settings), 2006 – 2016.

Year	Title	Source
2006	The Oslo Agenda for Entrepreneurship Education in Europe	European Commission.
2009	Entrepreneurship in Vocational Education and Training. Final report of the Expert Group.	European Commission for Enterprise and Industry.
2010	Towards Greater Cooperation and Coherence in Entrepreneurship Education: Report and Evaluation of the Pilot Action High Level Reflection Panels on Entrepreneurship Education initiated by DG Enterprise and Industry and DG Education and Culture.	European Commission.
2011	Guidance supporting Europe's aspiring entrepreneurs. Policy and practice to harness future potential.	CEDEFOP – European Centre for the Development of Vocational Training.
2011	Entrepreneurship Education: Enabling Teachers as a Critical Success Factor. A report on Teacher Education and Training to prepare Teachers for the challenge of entrepreneurship education.	European Commission.
2012	Entrepreneurship Education at School in Europe. National Strategies, Curricula and Learning Outcomes.	European Commission.
2012	Building Entrepreneurial Mindsets and Skills in the EU. A Smart Guide on promoting and facilitating entrepreneurship education for young people with the help of EU structural funds.	European Commission.
2013	Entrepreneurship Education: A Guide for Educators.	European Commission.
2015	Entrepreneurship Education: A road to Success. 13 Case Studies Prepared for the study 'Compilation of evidence on the impact of entrepreneurship education strategies and measures.'	European Commission.
2015	Entrepreneurship Competence: An Overview of Existing Concepts, Policies and Initiatives.	European Commission, Joint Research Centre.
2016	Entrepreneurship Education at School in Europe. Eurydice Report.	European Commission, EACEA/Eurydice.

All the reports are publicly available on the following websites.

https://ec.europa.eu/growth/smes/promoting-entrepreneurship/support/education_en

https://ec.europa.eu/growth/smes/promoting-entrepreneurship/support/education/commission-actions_en

https://ec.europa.eu/growth/smes/promoting-entrepreneurship/support/education/projects-studies_en

http://ec.europa.eu/education/policy/strategic-framework/entrepreneurship_en.htm

Appendix 2 – The Value of Competition within European Policy, Guidance and Case Studies, 2006– 2016.

Value/ Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Document	Part of an EE strategy	Communicates/celebrates entrepreneurship activities	A 'good practice' model for delivery	Encourages entrepreneurial skills	Supports interaction with private sector	Motivates students	A teaching method	Students learn from/are inspired by peers	Provides an incentive for students to participate	Rewards students	Engages teachers	Rewards teachers	An assessment method	Cash prize/finance is achieved	Better employability	Better start up rates	Increased entrepreneurial intention	Higher earnings	Economic growth
2006 (EC)	v	v																	
2009 (EC)	v	v	v	v	v	v	v			v	v	v		v		v			
2010 (EC)	v	v	v	v			v	v	v			v							
2011 (CEDEFOP)	v	v	v	v	v	v	v	v	v				v	v					
2011 (EC)	v		v		v		v												
2012 (EC)	v		v	v				v											
2012 (EC)	v	v	v				v	v					v						
2013 (EC)	v		v		v					v	v	v							
2015 (EC)	v	v	v	v		v	v			v	v	v		v	v	v	v	v	v
2015 (EC, JRC)	v		v	v	v		v						v						
2016 (EC)	v	v	v	v	v	v	v	v			v								
	11	7	10	7	6	4	8	3	3	3	4	4	3	3	1	2	1	1	1

Appendix 3 – EE Theories of Change.

- Braag, S., & Henry, N. (2011). Order 121-Study on Support to Indicators on Entrepreneurship Education. Framework Contract No. EAC, 19(06).
- EC (2015). Entrepreneurship Education: A Road To Success. A compilation of evidence on the impact of entrepreneurship education strategies and measures. Final Report
- Quality Assurance Agency (QAA). (2012). Enterprise and entrepreneurship education: Guidance for UK higher education providers.
- McLarty, L., Highley, H., & Alderson, S. (2010). Evaluation of enterprise education in England.

- Williamson, N., Beadle, S., & Charalambous, S. (2013). Enterprise Education Impact In Higher Education And Further Education.
- Young Enterprise (2014) Theory of Change. Learner Development Journey.

References:

Ames, C., 1992, Classrooms: Goals, Structures, and Student Motivation. *Journal of Educational Psychology*, Vol. 84, No 3, 261-271.

Ames, C. and Ames, R., 1984. Systems of student and teacher motivation: Toward a qualitative definition. *Journal of Educational Psychology*, 76(4), p.535.

Bacigalupo, M., Kampylis, P., Punie, Y., Van den Brande, G. (2016). *EntreComp: The Entrepreneurship Competence Framework*. Luxembourg: Publication Office of the European Union; EUR 27939 EN; doi:10.2791/593884

Boyask, R., 2016, Social Justice and Evidence-Based Education.

Brunello, G., & Schlotter, M., 2011. Non-cognitive skills and personality traits: Labour market relevance and their development in education & training systems.

Bryk, A. S., 2015. 2014 AERA Distinguished Lecture Accelerating How We Learn to Improve. *Educational Researcher*, 0013189X15621543.

Deci, E., & Ryan, R., 1985. *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum.

Duckworth, A. L., & Yeager, D. S., 2015. Measurement matters: Assessing personal qualities other than cognitive ability for educational purposes. *Educational Researcher*, 44(4), 237-251.

Dweck, C., 1986. Motivational Processes Affecting Learning. *American Psychologist*, Vol. 41, No. 10, 1040-1048.

EC - European Commission, 2005. *Mini-companies in Secondary Education*. Final Report of the Expert Group.

EC–European Commission, 2006. *The Oslo Agenda for Entrepreneurship Education in Europe*. In *Entrepreneurship Education in Europe: Fostering Entrepreneurial Mindsets through Education and Learning Conference*.

Goldacre, B., 2013. *Building evidence into education*.

Good, T. L., & Brophy, J. E., 2008. *Looking in classroom* (10th ed.). Boston: Pearson Education.

Greenhalgh, T., Wong, G., Jagosh, J., Greenhalgh, J., Manzano, A., Westhorp, G. and Pawson, R., 2015. Protocol—the RAMESES II study: developing guidance and reporting standards for realist evaluation. *BMJ open*, 5(8), p.e008567.

Gutman, L. M., & Schoon, I., 2013. *The impact of non-cognitive skills on outcomes for young people*. Education Empowerment Foundations, London.

Guskey, T.R., 2002. Professional development and teacher change. *Teachers and teaching*, 8(3), pp.381-391.

- Komarkova, I., Gagliardi, D., Conrads, J. and Collado, A., 2015. Entrepreneurship Competence: An Overview of Existing Concepts, Policies and Initiatives – Final report (No. JRC96531). Institute for Prospective and Technological Studies, Joint Research Centre.
- Heckman, J. J., & Kautz, T., 2012. Hard evidence on soft skills. *Labour economics*, 19(4), 451-464.
- Heilbrunn, S., & Almor, T., 2014. Is entrepreneurship education reproducing social inequalities among adolescents? Some empirical evidence from Israel. *The International Journal of Management Education*, 12(3), 445-455.
- Holmgren, C. and From, J., 2005. Taylorism of the mind: entrepreneurship education from a perspective of educational research. *European Educational Research Journal*, 4(4), pp.382-390.
- Hooley, T., 2016. What works in careers and enterprise? The Careers and Enterprise Company.
- Jagosh, J., 2017, Speaking at the Advanced Realist Concepts Conference, CARES, University of Liverpool Campus, January 31st, 2017.
- Lackéus, M., 2014. An emotion based approach to assessing entrepreneurial education. *The International Journal of Management Education*, 12(3), pp.374-396.
- Lackéus, M., 2015a. Entrepreneurship in education—What, why, when, how, *Entrepreneurship360* Background paper.
- Lackéus, Martin., 2015b. "Two flavors of entrepreneurial education - happiness empowerment versus meaningful creativity."
- Lackeus, M., 2016. Value Creation as Educational Practice – Towards a new Educational Philosophy grounded in Entrepreneurship? Doctoral Thesis, Chalmers University.
- Mann, A. Dawkins, J. and McKeown, 2017. Towards and employer engagement toolkit: British teachers' perspectives on the comparative efficacy of work related learning activities.
- Mann, A., & Kashefpakdel, E., 2014. The views of young Britons (aged 19—24) on their teenage experiences of school-mediated employer engagement. Mann, A., Stanley, J. and Archer, L.(2014) *Understanding Employer Engagement in Education: Theories and Evidence*. London: Routledge, 143-162.
- McAuley, E. and Tammen, V.V., 1989. The effects of subjective and objective competitive outcomes on intrinsic motivation. *Journal of Sport and Exercise Psychology*, 11(1), pp.84-93.
- McLarty, L., Highley, H., & Alderson, S. 2010. Evaluation of enterprise education in England.
- Mclean, K., 2006. Conversations – A new model of qualitative research.
- Nabi, G., Liñán, F., Krueger, N., Fayolle, A. and Walmsley, A., 2016. The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, pp.amle-2015.
- Oosterbeek, H., Van Praag, M., & Ijsselstein, A., 2010. The impact of entrepreneurship education on entrepreneurship skills and motivation. *European economic review*, 54(3), 442-454.

- Orlick, T.D., 1974. Sport Participation—A Process of Shaping Behaviour. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 16(5), pp.558-561.
- Passiante, G. and Secundo, G., 2002. From geographical innovation clusters towards virtual innovation clusters: the Innovation Virtual System.
- Pawson, R., 2006. Evidence-based policy: a realist perspective. Sage publications.
- Pawson, R., Greenhalgh, T., Harvey, G. and Walshe, K., 2005. Realist review—a new method of systematic review designed for complex policy interventions. *Journal of health services research & policy*, 10(suppl 1), pp.21-34.
- Pawson, R. and Tilley, N., 2004. Realist evaluation. Monograph prepared for British Cabinet Office.
- Peters, M., 2001. Education, enterprise culture and the entrepreneurial self: A Foucauldian perspective. *Journal of Educational Enquiry*, 2(2), pp.58-71.
- Rae, D., 2010. Universities and enterprise education: responding to the challenges of the new era. *Journal of Small Business and Enterprise Development*, 17(4), pp.591-606.
- Schurr, A., & Ritov, I., 2016. Winning a competition predicts dishonest behaviour. *Proceedings of the National Academy of Sciences*, 113(7), 1754-1759.
- Shearn, K. 2017. Email correspondence from member of the RAMESES JISC online research community. <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=RAMESES>
- Shindler, J., 2009. Transformative classroom management: Positive strategies to engage all students and promote a psychology of success. John Wiley & Sons.
- Sukarieh, M., & Tannock, S., 2009. Putting school commercialism in context: A global history of junior achievement worldwide. *Journal of Education Policy*, 24(6), 769-786.
- Vansteenkiste, M., & Deci, E. Competitively Contingent Rewards and Intrinsic Motivation: Can losers remain motivated? *Motivation and Emotion*, Vol, 27, No. 4, December 2003.
- Van Zanten, A., 2005. New modes of reproducing social inequality in education: the changing role of parents, teachers, schools and educational policies. *European Educational Research Journal*, 4(3), pp.155-169.
- Von Graevenitz, G., Harhoff, D. and Weber, R., 2010. The effects of entrepreneurship education. *Journal of Economic Behavior & Organization*, 76(1), pp.90-112.
- Watson, K., McGowan, P. and Cooper, S., 2016. Reimagining the extracurricular business plan competition through the incorporation of effectuation.
- Westhrop, G. 2017. Email correspondence from member of the RAMESES JISC online research community. <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=RAMESES>
- Wong, Geoff, et al., 2016. "RAMESES II reporting standards for realist evaluations." *BMC medicine*.
- Zhao, Y. What works may hurt: Side effects in education. *Journal of Educational Change*. 18(1) 1-19