

Using Extreme Pedagogy to Enhance Entrepreneurship Education

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Abstract

We address the ongoing concern that entrepreneurship education (EE) is not preparing students sufficiently well for jobs in the 21st-century. We argue that many criticisms leveled against EE for not effectively addressing the entrepreneurial skills gap are due in part to EE's emphasis on the roles of specific stakeholder groups separately (i.e., universities and their leaders, instructors, students, potential employers) rather than a shared focus on developing valuable graduates. Stated differently, there are competing and conflicting “ownerships” over the entrepreneurial skills gap. We enhance current pedagogical methods by offering a learning innovation called extreme pedagogy. Extreme pedagogy takes place when *all stakeholders have a collective intention and ownership in producing graduates with relevant entrepreneurial skills*. We describe extreme pedagogy's conceptual foundation based on psychological ownership theory, the effective use of extreme ownership in military contexts, and the role of universities and their leaders, instructors, students, and potential employers in the implementation of extreme pedagogy. We then summarize themes from a workshop involving entrepreneurial leaders across industries on EE challenges and the role of extreme pedagogy in addressing them. We close by describing anticipated benefits of extreme pedagogy for all EE stakeholders.

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“When no one takes ownership of the problems...the problems never get solved.”

U.S. Navy Lieutenant Commander and SEAL Leader (Retired) Jocko Willink

Entrepreneurial value—enriching business performance through value creation (Bruyat & Julien, 2001; Moroz & Hindle, 2012)—is increasingly important in the 21st-century (Kuratko & Morris, 2018). This perspective becomes even more critical when considering ongoing business challenges such as the 2000-2001 dot-com recession, the 2007–2009 global financial crisis, and the 2020 COVID-19 pandemic. Contemporary disruptions have challenged traditional business models and highlight the need for students to acquire entrepreneurial skills (Dwivedi et al., 2020; World Bank, 2021). Examples of these disruptions include video and entertainment streaming (Luo, 2020), food services (Galanakis, et al., 2021), tourism (Higgins-Desbiolles, 2020), waste management (Van Fan et al., 2021), and international trade (Boylan et al., 2021). However, in the view of many, entrepreneurship education (EE) seems to be largely absent in the list of credits that have helped businesses prosper through these challenges. Unfortunately, the “product” of EE—the entrepreneurial graduate—is usually seen as deficient in relevant skills to create entrepreneurial value (Brown & Crawford, 2021; Longmore et al., 2018). Consequently, the legitimacy of EE remains in question by entrepreneurship scholars as well as entrepreneurs (Berglund et al., 2020; Fayolle et al., 2016; Hansen, 2021).

To address these challenges, we propose the adoption of a learning innovation we label *extreme pedagogy*. Numerous entrepreneurship learning innovations have been proposed in the past, and many of them are clearly useful and effective. However, we believe that the ongoing dissatisfaction regarding EE is due at least in part to the fact that EE stakeholders, including universities and their leaders, instructors, students, and potential employers, remain disconnected and misaligned. In other words, EE stakeholders lack collective psychological ownership over the problem (Pierce et al., 2001; 2003). Our proposed learning innovation relies on (a) the theory of psychological ownership (Pierce et al., 2001; 2003) and (b) its application in the military in the form of “extreme ownership” (Willink & Babin, 2017). Our proposed innovation of extreme pedagogy is meant to enhance and certainly not replace current pedagogical methods. Extreme pedagogy takes place when *all stakeholders have a collective intention and ownership in producing graduates with relevant entrepreneurial skills*.

The remainder of our manuscript is organized as follows. First, we describe the theory of psychological ownership, which serves as the conceptual foundation for our learning innovation. Second, we describe the application of psychological ownership

and its effectiveness through the military principle of extreme ownership. Third, we describe and offer a conceptual model describing the tenets of extreme pedagogy and address the role and specific actions of key stakeholders in implementing it: universities and their leaders, instructors, students, and potential employers. Forth, we share perspectives on extreme pedagogy based on themes from a workshop involving entrepreneurial leaders across industries on EE challenges and the role of extreme pedagogy in addressing them. We close by describing anticipated benefits of using extreme pedagogy for all stakeholders.

Psychological Ownership: Theoretical Foundation for Extreme Pedagogy

Pierce et al. (2003) defined psychological ownership as “a state in which individuals feel as though the target of ownership (or a piece of that target) is theirs” (p. 86). Psychological ownership theory recognizes a cognitive and affective mental state associated with ownership—the emotional feeling of attachment to a target. A target of ownership can be physical or non-physical. Physical ownership can be considered the rightful claim to property (e.g., “I own a car”) and the privileges the property brings (Rousseau & Shperling, 2003). On the other hand, non-physical entities may include work in organizations, ideas, goals, team objectives, and even sustainable entrepreneurial practices (Mayhew et al., 2007; Pierce & Jussila, 2010). Importantly, psychological ownership can exist without the presence of physical ownership and can be extended as a sense of possessiveness or responsibility for a target (Pierce et al., 1991).

Particularly relevant for extreme pedagogy, psychological ownership can be considered at the group level of analysis when members experience a shared mindset toward ownership for a target that is collectively held (Pierce & Jussila, 2010). This gives us a basis to understand how a collective intention can be psychologically possessed for a target of ownership—what Willink and Babin’s (2017) termed the target of possession. In the case of EE, the *target of possession is the graduate with relevant entrepreneurial skills*.

Extreme Ownership: Application of Psychological Ownership in Military and Other Contexts

In his book “Extreme Ownership: How U.S. Navy SEALs Lead and Win,” decorated retired Navy SEAL officer Jocko Willink introduced the concept of extreme ownership based on the theory of psychological ownership. Extreme ownership is based on the collective belief of *team first, mission first*. That is, the members of a team must mutually possess a cognitive focus that is grounded in a perspective of collective intentionality (Carpenter, 2021). This is a different approach compared to a mindset of members in a collective who absolve themselves from ownership of the objective, and the objective is rarely accomplished. In the military, objectives are often executed as missions. Extreme ownership implies that team members collectively imbue a

psychological state of ownership over the mission, the actions to accomplish the mission, and the mission's outcome (Willink & Babin, 2017). Weiss and Johar (2018) acknowledged that this level of psychological investment takes place when individuals feel ownership because they hold the target of possession as part of the self—an identity attached to a military role that fosters purpose of the self within the group (Carpenter & Silberman, 2020). Although the concept of extreme ownership originated in military settings, it is similarly applicable to other contexts and industries including emergency medicine, fire and police protection services, and energy production, among others.

Learning Innovation: Extreme Pedagogy

Based on our previous sections addressing psychological ownership and extreme ownership, we believe that advancing EE requires a *collective intention and ownership of value co-creation in developing EE graduates*. In other words, many universities, and pedagogical methods are currently not facilitating skill development to innovate entrepreneurial value because “value is always and necessarily jointly co-created” (Pinelli et al., 2021, p. 262). Again, we acknowledge the vast body of work on EE (e.g., Martínez-Gregorio et al., 2021; Rideout & Gray, 2013) and recognize the call by Ratten and Usmanij (2021) advocating improved EE teaching practices. However, as noted by Winkler et al. (2021), there is a need to reimagine EE pedagogical opportunities to produce valuable graduates. Moreover, although Turner and Gianiodis (2018) acknowledged the considerable progress EE scholarship and pedagogy has gained over the past 20 years, they also noted major gaps.

We believe that an important reason for criticisms is that EE stakeholders are not oriented around a collective intention and disparate “ownerships” remain over the problem and solutions of creating valuable EE graduates with relevant entrepreneurial skills. The value of research, another key university product, is enhanced by a process of collective ownership (Aguinis, Audretsch et al., 2022). Similarly, based on the theory of psychological ownership and its extreme ownership application, by highlighting a sense of ownership over delivering valuable graduates with relevant entrepreneurial skills, we can orient our thoughts around a collective intention for EE.

As shown in Figure 1, extreme pedagogy consists of EE stakeholders having collective intention and ownership of value co-creation on the target of possession (i.e., graduates with relevant entrepreneurial skills). By codifying extreme ownership with the work of Pierce et al. (2003) on psychological ownership, a collective intention provides emotional leverage for each EE stakeholder to become psychologically invested and mutually accountable for co-creating graduates with relevant entrepreneurial skills.

Like any military mission, for extreme pedagogy to be successfully deployed, we must understand the “target” we want to acquire. This means we must first integrate EE stakeholders towards ownership of the desired outcome (i.e., valuable graduates). Then, the psychological investment of each EE stakeholder can be oriented towards a collective intention. Once a psychological investment is reached, the prescribed actions

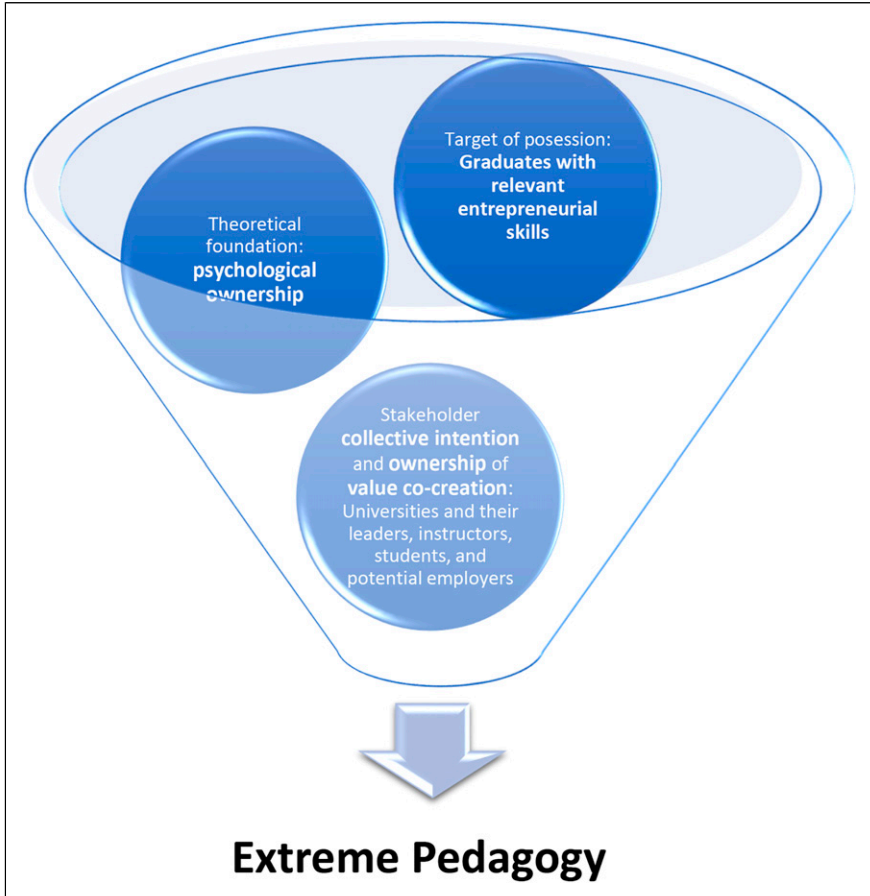


Figure 1. Extreme pedagogy: Components.

of each EE stakeholder should embody the team first, mission first principle. Each EE stakeholder should display behavior that shows their central commitment to accomplishing value co-creation.

Extreme pedagogy differs from other pedagogical approaches that do not include a collective intention of all EE stakeholders (i.e., universities and their leaders, instructors, students, potential employers) and value co-creation (i.e., graduates with relevant skills). For the most part, EE seem to be compartmentalized and siloed by the bounded perspectives of the needs and actions of each stakeholder group (Silberman et al., 2022). For example, although sometimes, but not always, there may be alignment between university administrators (e.g., deans) and instructors, and even students, rarely are potential employers included in the co-creation process as an important EE

stakeholder. As shown in [Figure 1](#), extreme pedagogy relies on collective and simultaneous ownership by all stakeholders.

Implementing Extreme Pedagogy

Extreme pedagogy can be implemented at the undergraduate and graduate level—as well as the executive education level. When introducing extreme pedagogy, we must first consider that extreme ownership is focused on the collective, not on individuals or individual stakeholder groups ([Willink & Babin, 2017](#)). A collective in the context of extreme ownership implies interconnected stakeholders where team victories mean *everyone* wins; failures mean *everyone* fails. We believe this contrasts with many EE settings, where EE stakeholders are brought together, but mutual accountability to outcomes does not exist because consequences may only be connected to one stakeholder group (e.g., instructors) but not others (e.g., potential employers) ([Isaacs & Vernon, 2011](#)).

The implementation of extreme pedagogy places attention on skill development. Specifically, extreme pedagogy is concerned with the capabilities to create entrepreneurial value beyond the doors of the classroom. This is different from some existing pedagogical approaches that focus on in-class metrics such as grades which may or may not reflect skill acquisition. The latter can create circumstances where focusing on doing what it takes to get a grade (i.e., “doing to do”) may champion attention over the effort needed for skill development necessary for creating entrepreneurial value. Instead, extreme pedagogy champions a “doing to become” approach ([Silberman, 2021](#)). That is, extreme pedagogy focuses on establishing ownership by all EE stakeholders over learning activities to help EE graduates become more valuable.

Next, we discuss the role of key stakeholders and recommendations for what each can do to implement extreme pedagogy successfully. We first discuss the role of universities and university leaders, followed by the role of instructors, students, and then potential employers.

The Role of Universities and University Leaders

Over the last 20 years, many employers have increasingly sought and found new talent outside the university system ([Farashah et al., 2019](#)). The paucity of job-ready graduates is of concern to many university deans, even those affiliated with top-ranked business schools ([Hogen et al., 2021](#)). University education is often mentioned as insufficiently teaching entrepreneurial skills such as design thinking, critical thinking, and problem-based ownership ([Casner-Lotto & Barrington, 2006](#); [Parker, 2018](#); [Römogens et al., 2020](#)). Moreover, in many universities, teaching practices are directed and governed by professors who seem to be disconnected from the needs of students and potential employers given the research-practice gap ([Aguinis, Archibold, & Rice, 2022](#); [Denning, 2018](#); [Miller et al., 2011](#); [Wetherbe, 2013](#)).

We suggest the following actions that universities and their leaders can take to implement extreme pedagogy successfully:

1. Establish university mission and policies to engender a collective intention by all EE stakeholders to co-create EE graduates with relevant skills.
2. Prioritize collective ownership including deans and other administrators, instructors, students, and staff over entrepreneurship education.
3. Allow collaborative access by all EE stakeholders to continuously examine and improve EE learning activities.
4. Provide resources (e.g., technology, training, and development opportunities) to implement extreme pedagogy effectively.

The Role of Instructors

Teaching evidence-based and useful theory, concepts, and practices are obviously critical. But, instructors often teach obsolete concepts and outdated practices irrelevant for impactful performance in today's organizations (Denning, 2018). Take, for example, the case study that continues to be used by many business schools, often criticized for its irrelevance for teaching transferable skills (Mintzberg, 2004).

We offer the following suggestions to instructors interested in implementing extreme pedagogy:

1. Prioritize curriculum connected to skill development for entrepreneurial value.
2. Focus teaching around value co-creation with collaborative input and support from other EE stakeholders (e.g., potential employers from different industries).
3. Curate EE learning environments so the majority of experiences are relevant to skill development and entrepreneurial value.
4. Focus classroom management and metrics (e.g., grading criteria, assignments) on the development and reinforcement of behaviors and actions important for skill development (e.g., design thinking, critical thinking, problem-based ownership).

The Role of Students

A university qualification, which in the past may have prepared graduates to contribute to entrepreneurial ventures, is not enough for the 21st-century organization. Instead, employable graduates will be expected to exit EE in a work-ready mode and bring to the organization a demonstrable level of relevant entrepreneurship skill. And if a degree is not sufficiently valued by potential employers, then the graduate is left with the possibility of underemployment (Feldman & Turnley, 1995; Scurry & Blenkinsopp, 2011). We provide the following suggestions to students interested in benefitting from extreme pedagogy:

1. Prioritize commitment to developing skills and the capability to produce entrepreneurial value over grades that may not reflect these skills.
2. Seize the opportunity of EE learning activities and exploit them through openness and adaptiveness in how you show up and interact with others.
3. Own your performance (i.e., be responsible for how your actions and participation engage your and others' success) and build relationships with external stakeholders with the understanding that entrepreneurial value is necessarily and always jointly co-created with others.
4. Don't see EE learning activities as a credential; rather, understand a credential may get you employment or promotion opportunities, but it doesn't ensure you acquired the necessary skills to create entrepreneurial value.

The Role of Potential Employers

Future employers can view universities as “suppliers” of valuable talent (i.e., graduates with relevant entrepreneurial skills). A key characteristic in the potential employer-supplier relationship is understanding how the suppliers' value proposition creates a potential opportunity for the organization. Thus, potential employers and suppliers must clearly communicate what valuable input means to the organization and how a supplier's product can bring about such value. The problem is that there is a gap between what universities produce and what potential employers need (Monteiro et al., 2020). This is an important point because the employability of higher-education graduates with relevant labor market skills has been highlighted as an ongoing concern (Arranz et al., 2022).

We offer the following recommendations to potential employers interested in benefitting from extreme pedagogy:

1. Engage and invest time in the co-creation of EE curriculum and learning activities with universities.
2. Frequently and clearly communicate what job-ready skills are valued and needed.
3. Be open to views by other EE stakeholders such as potential employers in other industries.
4. Be prepared to offer financial support so universities have the needed resources to implement extreme pedagogy.

Extreme Pedagogy: Initial Evidence About its Effectiveness

In this section, we describe insights from a workshop at the Southwest Academy of Management Conference in New Orleans, LA, in March 2022. Entrepreneurial executives in several industries (e.g., healthcare, finance, consulting) offered their perspectives on the current state of entrepreneurial education and their views on the

applicability and effectiveness of extreme pedagogy. We summarize the content of this workshop around four themes.

The first theme was that organizations need to hire valuable graduates, and universities want their students to be hired. However, a problem occurs when the supplier (i.e., university) fails to understand the nature of what is demanded. Made worse when the “products” (i.e., graduates) from the universities have a false sense of relevance because there is no accountability to the demand (organizations’ needs). This theme illustrates the current opinion of many organizational leaders that graduates believe they are employable, but a large percentage have underdeveloped skills with little relevance for what is expected of them after they are hired (Silberman, 2022).

A second theme was the conclusion that very few graduates receive a strong entrepreneurial foundation. They are often not solid contributors when challenged with entrepreneurial opportunities central to personal or organizational success. Instead, many graduates are overconfident in their skillset and frequently take a defensive position when challenged. Moreover, many new graduates succumb to the pressure of stressful situations because they lack coping mechanisms.

A third theme referred to a lack of active engagement on the part of universities and what seems to be an approach to curriculum development that does not include potential employers explicitly. For example, one of the panelists disclosed that their organization reached out to their local university in hopes of offering their perspective that graduates are increasingly ill-prepared regarding entrepreneurial skills. This panelist was confident that the university would never have reached out to their organization to seek their input if the organization had not initiated the engagement. This panelist experienced a tepid reception at first, although their “email is replete with opportunities for our organization to write the university a check.” The irony does not escape us that external stakeholders believe their input is not seen as valuable although business schools are reaching out to them on an ongoing basis regarding fundraising efforts.

Finally, regarding extreme pedagogy specifically, the consensus among panelists was that it has great potential to reshape the objectives of EE by including potential employers in the conversation. They all agreed that extreme pedagogy is useful, and even necessary, to produce valuable graduates with relevant skills that would allow them to succeed in the current job market. Overall, they reacted positively to the key principles of extreme pedagogy and benefits resulting from a value co-creation process of producing graduates with relevant entrepreneurial skills.

Extreme Pedagogy: Anticipated Benefits

First, the benefits of extreme pedagogy become particularly salient when considering the threat posed by alternative EE certifications and licenses espoused by providers from outside of higher education. These alternative providers have been suggested to offer a better return on investment compared to a university degree (Dean, 2017; Farashah et al., 2019). In fact, according to PRNewswire (2021), the alternative

credentials market is forecast to increase by approximately \$27B during 2020-2024. Our point is that the university market share will continue to erode if *university leaders* do not act to address current challenges. By engaging extreme pedagogy to enhance current pedagogical methods, universities have an opportunity to increase the value proposition of EE graduates and universities.

Second, extreme pedagogy provides *instructors* with enhanced support for a sustainable path to teach relevant EE concepts. A benefit of extreme pedagogy for instructors is the ease of adoption without significant change to an instructor's current pedagogical approaches. This is accomplished through the shift from a "Lone Ranger" and individualistic approach to a collective value co-creation with other EE stakeholders (Aguinis, Audretsch et al., 2022). Extreme pedagogy recalibrates the path for instructors by instituting a shared intention and accountability for curating what potential employers desire when seeking to hire an EE graduate, allowing the instructor to focus on what matters—developing relevant EE skills.

Third, extreme pedagogy anchors *students* to other EE stakeholders through explicit accountability. As an outcome of extreme pedagogy, EE students will be given ample opportunity to take a more active role in their skill development necessary to produce entrepreneurial value beyond the classroom. To this point, we can draw on extreme pedagogy to inform and influence a student's learning perspective on their EE outcomes and reorient their focus from just internal (e.g., obtaining a good grade) to also external (i.e., skills valuable on the job market).

As an additional benefit, extreme pedagogy brings *potential employers* to the table as a critical stakeholder in EE. Potential employers, who are also potential donors, fill a gap in the value chain, which should serve to enhance the quality of the product of EE. Because there are varying conceptualizations of employability (Peeters et al., 2019), potential employers must be given the opportunity to clearly communicate what skills they are seeking from a new graduate, as well as which they are not. For example, Arranz et al. (2022) provided evidence that potential employers that engaged collaboratively with universities, especially with the use of internships, achieved a greater level of satisfaction when employing graduates.

Conclusions

Twenty-first-century challenges including ongoing crises and changes in business models demand entrepreneurial value creation. Entrepreneurial education is uniquely positioned to develop the skills necessary to create entrepreneurial value. However, there is a disconnect among the various stakeholders involved in the process of creating skillful graduates. Universities and their leaders seem to be focused on funding, instructors on their career advancement, students are subservient to the system, and potential employers cry foul without organizing themselves to add value to the development of the EE graduate. To address these challenges, we advocate the adoption of a learning innovation we label extreme pedagogy: All stakeholders have a collective intention and ownership in producing graduates with relevant entrepreneurial skills.

Extreme pedagogy serves as an enhancer, and not a replacement, to current pedagogical methods. By introducing a collective intention and value co-creation on the target of possession—EE graduates with relevant skills—extreme pedagogy serves as a catalyst for a shift to a shared mission of preparing EE students for jobs in the 21st-century. Just like the execution of a military mission, extreme pedagogy imbues a psychological state of collective ownership over the mission, the actions to accomplish the mission, and the mission's outcome. Extreme pedagogy can be implemented immediately and bring benefits to all EE stakeholders (i.e., universities and their leaders, instructors, students, and potential employers). We hope our specific and actionable recommendations for each stakeholder group will be useful in generating the many benefits anticipated from implementing extreme pedagogy.

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