

Work-based learning: an approach towards entrepreneurial advancement

Work-based
learning

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Abstract

Purpose – The purpose of this paper is to promote the adoption of a work-based learning (WBL) approach by highlighting the benefits to students, organizations and the economy.

Design/methodology/approach – This paper provides a review and synthesis of current literature, including two separate case studies, which serve to demonstrate the practical applications of entrepreneurial education in different countries and how this application works to strengthen economies and improve communities.

Findings – Learning entrepreneurship in a real-world environment can bridge the gap between traditional, classroom instruction and idea-driven product and service development. It is a business-effective approach that achieves measurable results. Traditional education, typified by mastery of facts and evaluation by testing, can morph into creative, research-inspired solutions that fulfill public and private organizational needs. Success is irrefutable, measured by tangible results. In WBL, students can use industry-standard technologies and collaborate with mentors, clients and customers. They can work as individuals and in teams, with their entrepreneurial education beginning as early as elementary school. In the process, students learn to be motivated by their own achievements, rather than grades. They learn to engage in creative problem-solving, based upon current data, and measure their ability to deal with challenge and failure through an iterative process of problem-solving.

Originality/value – The completion of this research study serves to highlight the potential benefits that Malaysia could attain through the adoption of WBL within the country's school systems.

Keywords Malaysia, Education, Entrepreneurship, Work-Based Learning

Paper type Conceptual paper



Introduction

By learning the principles of entrepreneurship in a real-world environment through a process known as work-based learning (WBL), learners can bridge the gap between traditional classroom instruction and an idea-driven model of product and service development that has been proven effective in businesses and which achieves measurable

results. Traditional education, typified by learning facts and evaluated by testing, can segue into creative solutions drawn from research, meeting the needs of public and private organizations whose success is measured by results. During the WBL process, students can use industry-standard technologies and collaborate with mentors, clients and customers. They can work as individuals and in teams. This entrepreneurial educational process can begin as early as elementary school. In the WBL approach, students learn to be motivated by their own achievements rather than their grades. Students learn to adopt and apply creative problem-solving techniques based on current data and can evaluate their ability to deal with challenges and failure in an iterative, collaborative process of problem-solving.

Due, in part, to the myriad learning styles of students, classroom education can be insufficient to provide the tools for success or even the thinking processes necessary to use critical and creative thinking, resulting, for some students, in inaccurate perceptions of context. Because of this, students with no work experience often lack the critical thinking processes they need to become successful innovators. Researchers have shown, however, that some schools have adopted programs that are able to provide these skills to all students, in processes commonly used in elementary and high schools offering entrepreneurial education.

According to the [Welsh Government \(2014\)](#), success in teaching entrepreneurial skills can be achieved in children as young as age five. Two examples of entrepreneurial training in action may be found in an elementary school in Wales and in a high school entrepreneurship program in the USA. A third-grade class in Wales uses animation software to create a video production of a frog's life. The students then market their science videos to members of their community and sell tickets to their presentation. Using their own ideas and learning new skills, the students create a product that is both educational and valuable. A by-product of this project is the self-confidence they gain from knowing they have made a significant achievement.

Seniors enrolled in an entrepreneurial program at a US high school use modern marketing tools and technologies to analyze the customer base of a mobile product start-up, marketing to college-bound students. Based on their own customer research, they provide a revamped design for their mobile-based user interface.

WBL as a process is similar to the practices of entrepreneurship when it comes to the integration of innovation and methodology. Ultimately, WBL can be a driving force for economic development and technological innovation. WBL and entrepreneurship share the qualities of self-direction, creativity, innovation and awareness. These characteristics are all instrumental in creating an entrepreneurial perception and skill set.

WBL programs enable students to learn skills while working. Such skills extend beyond mere technical knowledge or the memorization of facts and should include enhancing the ability of the students to teach themselves. WBL can lead to high-value careers and entrepreneurial activities. Entrepreneurial courses integrated with an institutional curriculum combine to form a highly functional educational paradigm. WBL merges the practical with the theoretical. Learning becomes more than just acquiring new skills; it becomes a platform for the creation of new knowledge ([Raelin, 2012](#)). The ability to create new knowledge is a key component of successful entrepreneurs. Good attributes of learning the skills of entrepreneurship can be observed in children: they are motivated to learn, have many different interests and are insightful in asking questions. These qualities enable children to creatively drive their own learning process ([Löbler, 2006](#)).

The work-based learning dynamic knowledge view shared by entrepreneurs

WBL supports a dynamic view of knowledge, rather than adopting a static approach that leads to mere fact collection. Within the more traditional, static approach, student knowledge, defined

as facts or concepts, is not accepted until it has been tested in a well-defined context. Within the WBL approach, however, learning becomes a spontaneous process occurring during the problem-solving process. Part of the problem-solving process is the fulfillment of a need by providing a service or product previously lacking, a core entrepreneurial skill (Raelin, 2013). A well-known example of this entrepreneurial approach to business is that of the Levi Strauss Company, established in California during the gold rush. Hardworking miners needed rugged pants that would withstand the harsh conditions, so the company responded with the creation of a new product. In 1873, Levi Strauss patented riveted pants, the product that would become the first blue jeans. The company's earnings, after 143 years, were over \$4bn (Levi Strauss, 2019). This application of problem-solving within a work-based construct is an example of dynamic WBL, using problem-solving skills that coalesced into an exceptional entrepreneurial outcome. Levi Strauss called this spontaneous improvisation, "employing creative resourcefulness" (Levi Strauss, 2019, p. 1).

The characteristics of WBL are:

- creativity;
- self-direction;
- self-learning;
- expressiveness;
- emotional commitment;
- real-time perception;
- continuous engagement; and
- awareness (Raelin, 2013).

Each of these characteristics is instrumental in building entrepreneurial perception and the skills an individual will need to succeed in an entrepreneurial environment (Raelin, 2013).

There are benefits for all participants of work-based programs, employers and students alike. Employers acquire talented and skilled workers, while students are challenged as they learn how to address real-world problems, using the problem-solving capabilities that can help them gain entrepreneurial skills. WBL boosts the career development potential of learners.

Students learning in a work-based environment are more likely to view their work positively and become motivated learners. Traditional learning environments often increase the chances of poor performance and downward career drift, especially for those not benefiting from traditional teaching methods (Andresen *et al.*, 2011). A study by Andresen *et al.* (2011) established a connection between vocational training in a work-based environment offering voluntary learning opportunities and student achievement. From this success, it can be seen that many students disenfranchised by traditional schooling can become motivated, proficient self-learners.

Promising WBL models are emerging that can connect formal vocational education and apprenticeship training. Improved critical thinking skills, problem-solving and self-learning all help drive a high skill economy. Work-based training systems provide the skills necessary for economic development in a world of fast-paced technological growth. (Ball and Cohen, 1999).

Strategies

Learning institutions should work in partnership with businesses and organizations of all sizes to adopt strategies for functional and flexible WBL programs in which students can obtain education driven by their interests. In this mutually beneficial relationship,

employers and students realize direct and indirect benefits. For employers, these include helping build a highly skilled workforce that benefits both themselves and the economy. Students are afforded the opportunity to not only learn but also earn, almost always a strong incentive. [Table I](#) summarizes helpful strategies for entrepreneurial education partnerships.

Options

Not all on-the-job training provides valuable skills or knowledge to participants. This means that WBL program design must be formally evaluated to avoid creating low-value learning opportunities. Business strategists and course instructors can increase the value of learning within a work environment. Mentors are key to an improved learning process. They can play an important role in encouraging people to reflect on their experiences and learn from their mistakes. Experienced workers and specialists can guide learners and act as role models. Show-and-tell training by both learners and teachers can help inspire a cooperative learning strategy that engages participants. WBL trainers should regularly provide problems for workers to solve. These problem-solving challenges should become an intrinsic part of the WBL experience.

Many researchers are interested in the role of employee supervisors, specifically, how they understand the importance of improving the worker’s skills, experience and knowledge. In regions where this proactive approach to employee advancement does not form part of

WBL entrepreneurial strategies	Description
Engage in complex real-world assignments Stakeholders expect results	Students are assigned complex real-world projects. They are expected to provide practical solutions Achievement is measured by success. This motivates students far more than grades. They have responsibility to their entrepreneurial partners
Address skill gaps Students learn by solving problems “Reward solutions, ignore errors” is the attitude for success	Mentoring and expert and individual skill training can bridge gaps Students solve real-world problems like creating an interface design for a mobile marketing entrepreneur Just the opposite of a typical school environment, errors are ignored and solutions are rewarded. Iteration of an optimal solution is a healthy entrepreneurial approach
Collaborate through the use of curriculum in joint industry–education efforts Explore a dynamic view of knowledge Schedules support concurrent enrolment	Curriculum, students and industry are partners in professional development. Collaboration takes place between entrepreneurs, communities, students, mentors and industry experts Real data is constantly changing. Successful solutions come from understanding this and maintaining a dynamic view Schedules are designed to encompass opportunities for concurrent college enrolment and participation in for-credit programs. Block scheduling allows students to take more courses within a school year
WBL are goals set by stakeholders	Successful WBL entrepreneurial programs include goals for students, employers and entrepreneurs in both academic and industry-related context
Accountability through assessments	Assessments enforce accountability for all stakeholders, including students, employers and instructors. Performance-based assessments allow students to demonstrate in-depth understanding. These assessments occur throughout the year
Continuous communication	Continuous communication between students, teachers and entrepreneurial partners includes comprehensive progress tracking
Post-secondary partnerships	Strong partnerships between secondary and post-secondary schools lead to better qualifying test scores and admission possibilities

Table I.
WBL entrepreneurial strategies

corporate culture, it is difficult to develop and implement WBL (Andresen *et al.*, 2011). Organizations often require a more structured intervention to develop learning islands, quality circles and other techniques that have proven beneficial in the development and creation of learning-rich work environments. Inter-organizational agreements for broad-based learning initiatives are a resource-efficient way to create more valuable WBL programs. The opportunity for wider knowledge acquisition and enhanced skill development can easily exceed the potential provided in a formal training setting. WBL experiences and career preparation nurture the formation of aspirations and informed decision-making. Educators at all levels, including those at the college level, can provide valuable WBL opportunities that broaden students' abilities through collaborative experience.

Good practices and experience

The development of high-quality programs for WBL demands relevant and integrated curricula. Educational programs spanning both traditional subjects and those covering WBL approaches are needed. De Graaf and Kolmos (2013) argued that pairing students with mentors or enrolling them in internship programs was not enough. For learning programs to be successful, the instructors must set goals for both the employers and students. Furthermore, learning programs should provide exhaustive instructions for organizational authorities and academicians.

Work-based programs help students explore potential careers and aid them in becoming active learners. Consequently, educational departments should integrate career-related activities into all aspects of curriculum design. Career awareness is unattainable unless teachers introduce students to diverse career opportunities. Students can be inspired to explore and refine areas of interest.

Regular assessments for both learners and their trainers are essential. Such assessments can support short- and long-term quality management by identifying problems in a timely way. For learners, WBL assessments demonstrate their understanding and newly gained experience while providing a means through which trainers can rapidly identify students who are struggling with certain concepts. The implementation process prompts learning institutions to set explicit goals endorsed by business partners, teachers and students.

The organization that hosts trainees may eventually promote them into managerial roles. However, the learners are not the only group that benefits from the program. Mentors gain useful skills and knowledge by consistently training new recruits; young people are creative, enthusiastic and can inject fresh thoughts and ideas into the business. Eventually, enterprises will be rejuvenated as their staff sharpen their know-how and apply that knowledge to solve fresh challenges.

Given that successful trainees are more likely to stay after the program ends, labor turnover is significantly reduced by a successful apprenticeship project. This is a beneficial outcome for Malaysian corporations, where the processes driving key organizational objectives (such as employee retention, work structure and wage platform) interact for a better overall outcome. Top-level management can help catalyze and improve relationships between their employees and their supervisors through the development of corporate ethos and codified values.

According to Raelin (2013), one of the most fundamental practices is addressing the skills gap, a process particularly beneficial for the employer. Undeniably, WBL is an important tool for small and medium enterprises with limited operational resources. The integration of WBL reacts in an efficient, resourceful and flexible manner to meet the company's demand through development and implementation of tailored programs for addressing unique skill gaps.

Case studies

Entrepreneurship and economy

In recent times, established businesses have had higher levels of success, as compared to new business endeavors, particularly in the realm of large, well-funded businesses. Despite this current trend, in the past it was the newer companies that played a major role in driving technological innovation. To be most effective in terms of stimulating the economy, what is best might simply be increasing the number of start-ups, as they have proven to be the most effective in creating new jobs and sparking technological innovation. A stable, robust economy needs a mix of both start-ups and established companies (Surowiecki, 2016).

Work-based entrepreneurship in Wales. Wales has placed an emphasis on combining education with entrepreneurship since 2010. Their national objective of supporting entrepreneurial skills in education is demonstrated nationwide in both elementary and high school education programs. They seek to foster and achieve student entrepreneurship competency through a progressive process of leadership and teaching. This begins by including work-based entrepreneurship as an educational goal in school development plans. As the plan matures, specific measurable objectives are embedded within department or subject objectives. Part of the goals for such a program includes staff awareness and a commitment to entrepreneurship through the educational organization as well as within the community. Continuing professional development for staff enriches their ability to evaluate both entrepreneurial learning and teaching. Entrepreneurial teaching at the elementary, high school and collegiate levels supports entrepreneurship education.

Case study: Monmouthshire, Wales

In an entrepreneurial project in a Welsh elementary school in Monmouthshire, third-grade students organized, designed and monetized a science event by creating a film about the life of a frog. The students learned film-making skills, animation techniques, and how to use the medium of commercial film-making to teach scientific concepts to an audience. The third-grade students decided what to do, the direction that they wanted to take with each film-making project and were pleased with their results overall.

The students decided to share what they learned with others. They monetized this process by creating a premiere film presentation event and charged an admission fee to cover costs. They also decided to earn a profit by selling popcorn. Their entrepreneurial event was planned as a three-phase project. During Phase 1 they obtained funding from a bank to cover the costs of the project. The loan was used to pay for the materials they needed. They called the second phase Popcorn for Profit. During this phase, the students engaged in product development. They considered reselling precooked popcorn but finally decided that cooking their own popcorn was a superior choice because it was less expensive and tasted better.

Students next explored what needed to be done in terms of actual manufacturing. They set up a test and production process that included creating and testing an array of popcorn types. They considered flavors from the mundane to the extraordinary. After serious consideration, they made a decision based on maximizing profit. During the event organization phase, they defined their marketing strategy: advertising the event, printing tickets, organizing the “theatre” and setting up the equipment. Because of their efforts, the students succeeded in making a profit while learning to enjoy a creative learning process, in which they saw a successful result from turning their ideas into a science presentation enjoyed by many people in their community.

More than new skills and profit were achieved here. There is nothing more powerful than conveying to students that learning is a fun process, one in which they are motivated to participate. The students also learned how to conceive of something, plan how to achieve

their goals, cooperate with others, and, ultimately, how to participate in their own success story. This is a fine way to build self-esteem through success, driven by well-executed entrepreneurial projects. Students engaging in this type of work-based entrepreneurial effort will find they have far more skills than those who participate solely in traditional classroom learning activities. These same students will feel confident in building their own entrepreneurial careers.

Case study: Ohio, USA

An educational research project funded by the National Science Foundation asked the question, “Can students in K-12 handle an experiential entrepreneurship class?” Senior students at The Hawken School in Ohio participated in a 12-week course in entrepreneurial studies (Blank, 2014). During this program, the students engaged in a real-world marketing project. The primary objective of this project was to get students to think like entrepreneurs. Ideation, the creation of new ideas, was a major objective. Customer development was another part of the process, in which the students tested the validity of ideas, answering questions about having the right product for the right customer at the right price and connecting with the right channels. The project sought to clarify that an idea is not a company and that most initial ideas are wrong. To avoid selecting the wrong idea, students took someone else’s idea and worked on the customer discovery process. In the second half of the course, they used the customer discovery process to conceptualize their own product.

The project was not a hypothetical one; real-world companies, two start-ups that lacked the funding, human resources and time to solve the problems they outsourced to the students, trusted the students to find the best solutions to their identified areas of difficulties. Students applied customer development methodologies, used Lean Launch pad and the business model canvas to support their research (Blank, 2014). One of the companies was three years old and was marketing a physical product. They needed assistance in streamlining their market and channel. The second company was just one year old. The company had failed to complete its own customer validation process in marketing mobile-based products to college-bound teens. The student teams conducted more than 100 detailed interviews for each client to answer their marketing questions (Blank, 2014).

How did students experience these challenges? Students felt a great deal of responsibility to produce results because real companies were relying upon them. They quickly discovered that the answers they needed were not in textbooks. They had to rely upon their own ingenuity to succeed. For the first time in their lives, they learned how to actively collaborate. And in the process, they learned about themselves. Part of this acquired knowledge included learning how to cope with failure and how to evaluate their own strengths and weaknesses. The students became self-motivated and came to care about the processes of learning, creating, thinking and producing, rather than working for a grade (Blank, 2014). Students experienced a creatively disruptive movement away from traditional classroom learning. They learned to articulate their expectations and mold their creative processes, using breaking technology, entrepreneurial mentoring and their own collaborative thinking to achieve their envisioned real-world outcome.

The deliverable. In just three weeks, students had to create a solution and present their findings. One major *problem* was the user interface that the students needed to redesign for one of the two companies. To address this concern, students with no previous programming experience applied Lean UX strategies and tools. They also relied upon a professional UX mentor. The mentor advised the students how to develop archetypes and narratives based on evidence analyzed and synthesized from the 100 interviews, the students conducted for

each client, and offered insight into how students would need to propose disruptive solutions to solve customer problems (Blank, 2014).

Tools and methodologies. Students were divided into four teams, each of which had a mentor. Launch Pad Central was used as a management tool and repository for data. Lean UX supported the user experience in a way that was more focused on design and less focused on deliverables. It required greater collaboration and used feedback as early as possible. This iterative and cyclic process enabled better decisions to be achieved in a flexible environment, fostering quick but viable solutions (Iterative Design Foundation, 2016).

Conclusion

The integration of WBL can be a powerful platform for learning that can be used to obtain comprehensive work-based skills, incorporating the ability to think critically while enabling participants with the skills needed to discover how to learn. WBL participants can prepare for specific job competencies while learning the skills necessary to become entrepreneurs. Failing and disengaged learners can be motivated through the ability to drive their own learning process, creatively acquiring problem-solving skills and being innovative. Through WBL, students can acquire the knowledge and skills necessary to become successful entrepreneurs.

Entrepreneurship and WBL boost labor market results. To make good use of these effective learning skills is a true goal that can provide real-time economic boosts. As a result, it is recommended that the government should support the establishment of institutions that incorporate robust WBL systems. Such a process can drive improved coordination between learning institutions and corporations. It can also create a population with better problem-solving skills. The net result should be improved solutions to labor market challenges on a national level and an education system that improves perception, collaboration and individual opportunity.

While classroom education can be negligent in providing the tools for success or in providing the thinking process necessary to use critical and creative thinking, entrepreneurial education implemented through educational programs offers a better solution. Students with no work experience lack the thinking process they need to become successful innovators. These skills can be and are being provided in some schools today at both elementary and high school levels.

Two examples of entrepreneurial training in action may be found in the previously discussed Welsh elementary school and Ohio high school entrepreneurship programs. We have seen how individual effectiveness can be driven by entrepreneurship programs at the elementary and high school levels; these approaches could easily be adopted at the collegiate level as well. Programs such as these fill a gap between the static way learning that takes place in the classroom, where so much is driven by testing and grades, and in the real world, where individuals and companies are dependent on the work we do. The classroom is generally a controlled environment, but the real world is constantly changing, always offering new problems that must be dynamically solved.

Entrepreneurial WBL brings reality and responsibility into learning. It affords students the opportunity to understand how they can drive their own careers and compete, transitioning from school to work with a record of achievement and provides students with the confidence of knowing that they can teach themselves, collaborate as valued members of a team and be successful at many things. In the future, it would be ideal if entrepreneurial learning was implemented in all schools at both the elementary and high school levels. This kind of program enables young members of the community to become better thinkers and developers of innovative processes and products. This can only serve to strengthen economies, improve communities and better lives.

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