

## Where Teaching Ends and Learning Begins: A Problem Based Learning Model for CPTED Education

Chuck Genre

“The best time to learn anything is when whatever is to be learned is immediately useful to us.”

– Goodwin Watson

This is your mission should you choose to accept it:

*You are a new crime prevention specialist. Your supervisor indicates that local residents have had trouble with disorderly youths in Westfield Park. The park is surrounded on three sides by local residences with numerous walkway exits to surrounding streets. The local high school is situated directly opposite the park. A records check indicates that neighbors and school officials have called the police about the youths in the park on numerous occasions. Police reports describing trespassing, burglary, larceny, drug usage and disorderly conduct have been filed over the past two years. These events occurred during both daytime and evening hours. Your supervisor wants you to develop an effective and sustainable solution that lowers problems and community fear. He has heard that CPTED is an effective technique for problem reduction and wants you to use it. The project results will be presented to the city mayor upon completion.*

Does this scenario sound like something from the movie “Mission Impossible”? Indeed, like the movie’s protagonist, the crime prevention specialist of this scenario is faced with a complex problem. This scenario seems even more daunting if the specialist does not know much about CPTED. Therefore, how should the specialist be expected to learn CPTED AND solve the park problems? Certainly, the dual tasks of learning a new skill and solving a community problem must lie beyond the call of duty. Perhaps it would make more sense to learn CPTED first, then work the park problem; or conversely, complete the park problem then learn CPTED for the next scenario in which it is needed. In fact, neither option is appropriate for optimal learning. Learning CPTED in the context of solving the park problem is the most beneficial manner in which to learn. As strange as it may sound, the best environment for learning often begins with the problem, not with the training. As an educator and learner of CPTED, it is your mission to know how to create the best learning environment for CPTED.

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## Education and Learning: The Starting Point

The terms “education” and “learning” carry an intuitive meaning, but it is important to address a key distinction between them. Malcolm Knowles refers to education as “an activity designed to effect changes in the knowledge, skill, and attitudes of individuals, groups, or communities (Knowles et al., 1998:10). Conversely, learning is the process by which knowledge, skills, and attitudes are acquired. Although these concepts seem quite simple and understandable, the medium through which education and learning are best cultivated has been the subject of much research and debate by learning theorists. The consequences of this debate resonate heavily for CPTED education.

Over the last century, the fields of education and learning theory have evolved significantly, but not without struggle. One of the central debates has involved the use of pedagogical or andragogical approaches to education. Pedagogy means “the art and science” of teaching children. Its hallmarks includes a teacher-centered education which controls and dictates the parameters for content delivery, such as what, when, where, and how content is directed. Learners, on the other hand, play a submissive or passive role, and must operate under the restrictions placed upon the learning environment by the teacher. Excluding the early Greeks’ use of Socratic exchange, this model was popularized and refined between the seventh and twelfth centuries by religious scholars who thrived upon authoritative delivery of religious studies to young monastic and cathedral school learners in Europe (Knowles et al., 1998:61). As both secular and religious educational institutions flourished in subsequent years, pedagogical models were readily adopted for widespread application to both children AND adult learners. That’s right, most of us have been educated by a teaching method developed 1400 years ago for young boys vying for positions within the church!



*Photograph 1: Adult learners in the Mozambique Police thrived in a “lecture lite” learning environment*

Classes filled with boundless lectures distributed from authoritarian perspectives are still commonly found in many professional and academic educational environments. Indeed, as educators, many of us have used this model as well. From an instructional perspective, lecture-based delivery is perhaps the easiest to perform, but it ignores valuable research addressing the multiple intelligences, or learning styles, of adult learners (Gardner, 1983). The time has come for us to recognize that adults have different learning needs than children; lectures have value only in short durations for specific learning purposes. Some have considered a lecture-only approach tantamount to educational malpractice (Barrows, 2000). Alternatives do exist which are more successful at promoting learning in adults. Why not use a learning system for adult needs?

## The Adult Learning Imperative

Following World War I, advances in the behavioral sciences led to in-depth inquiry into the development of adult-centered, or andragogical, approaches to learning. Collectively referred to as “adult learning”, learning theorists and educators revealed essential human needs and qualities that foster learning within adults. Abraham Maslow saw the adult learner not as a “passive, reactive recipient” but as an “active, seeking, autonomous, and reflective human being” (Maslow, 1972: 44). Carl Rogers pointed to the adult learner’s need for self-direction and affective involvement (Rogers, 1969:5). The pioneering adult learning theorist, Eduard Lindeman offered several key principles of adult learning including:

1. Adults are motivated to learn as they experience needs and interests that learning will satisfy.
2. Adults’ orientation to learning is life-centered.
3. Experience is the richest source for adults’ learning.
4. Adults have a deep need to be self-directing (Lindeman, 1926).

Thus, the adult learning perspective took a very different form than conventional learning models. Given Maslow’s description of the adult learner, it is not difficult to imagine that active, seeking, and reflective adults need a dynamic learning environment that honors their needs for growth and discovery. Such a learning environment must not only place importance upon the product of learning, but also the process.

## From Theory to Practice: Problem Based Learning as a Process of Discovery

Adult learning theories blossomed in the latter part of the 20th century and reached into many educational disciplines. Though the benefits to the andragogical approaches were well established, the frameworks through which adult learning theories were transferred to practice took a variety of shapes. One of these frameworks, problem based learning (PBL), is emerging within the fields of crime prevention and policing to deal with complex community problems, such as the one in Westfield Park presented as the “mission” in the beginning of this article. Since the early 1970’s, PBL has made its way into disciplines such as education, engineering, biology, and medicine. Although problem based forms of learning pre-date this period, PBL first became a formalized education technique within the field of medical education during the early 1970’s at McMaster University in Ontario, Canada. Planted by Dr. James Andrews, and nourished in subsequent years by Dr. Harold Barrows, PBL revolutionized



*Photograph 2: PBL, like CPTED, is inherently group oriented*

the way fledgling physicians learned their craft (Barrows and Tamblyn, 1980). Now, most North American medical schools use PBL, and universities such as The University of Delaware have devoted their entire educational curriculum using adult learning principles and a problem-based framework for educational delivery.

### How Does PBL Work?

One of the earliest steps in PBL is the creation and/or presentation of an ill-structured problem, such as the problem offered at the beginning of this article. Students engage the problem and separate what is previously known about the problem versus what is unknown. Then students compile a list of learning issues based upon what they have identified as “need to know” items from the problem. Groups collaborate on an action plan designed to systematically address their learning issues. The final step involves evaluation of the product (Did the solution work?) and the process (Was the process effective?). Often, the products are presented in a public forum. The evaluations take many forms, including peer, self, oral, written, and instructor-based. The PBL process can be replicated as many times as is necessary to solve the problem.



*Photograph 3: Individuals learn from each other as much as from instructors*

The role of the educator, or instructor, in PBL is very different from conventional pedagogical “teachers”. The “sage on the stage” approach so common in conventional teaching is replaced by instruction through facilitation and guidance. The instructor offers insights into how and where learners can resource information for problem solving instead of giving them a mass of non-contextualized information coupled with expectations to regurgitate it for an exam. Thus, critical thinking and creativity supplant rote memorization as vital learning tools. These are the exact tools required of all successful CPTED practitioners. Real-world learning and problem solving require self-direction and group collaboration; PBL is inherently group oriented so learners become versed in the language of collaboration and community that is indispensable for complex, real-world problem solving.

Instructors must emphasize that learning is the responsibility of the learner, not the instructor; yet instructors have tremendous responsibilities in PBL. In addition to facilitating resources, instructors must educate learners about the role of emotional intelligence in learning, mentor and tutor groups and individuals, tailor instructional delivery for a variety of learning styles, and keep groups focused upon learning objectives. The renunciation of the power that accompanies traditional teaching and lecturing is perhaps the most ominous instructional obstacle. The purpose of “letting go” of control is to achieve shared authority among instructors and learners. The achievement of a democratic learning environment

that places equal importance upon learner experience and instructor knowledge is no simple task, although until it is embraced, power imbalances will threaten the learning experience (Lindeman, 1926: 166).

## Why Begin and Not End with the Problem?

In a traditional classroom setting, instruction usually precedes presentation of a problem. For instance, a medical instructor might teach medical students about the anatomy and function of the human heart, then present the students with heart attack symptoms and require the students to diagnose and solve the patient's problem. Similarly, a CPTED instructor might teach a class of police, planners, and local citizens of the Westfield Park area the concepts of territoriality and natural surveillance, then bring the class to the Westfield Park at the conclusion of the course and observe how well they apply what they have learned about territoriality and surveillance to the park project. In both cases, a problem is presented following the instruction.

Problem Based Learning uses the opposite approach. The problem is presented prior to instruction and learning material. Medical students are presented with a heart attack patient before learning about heart anatomy and function, and the CPTED class brings their own intractable Westfield Park project as the problem to focus upon during the first day of the class. Presentation of the problem at the beginning of the learning process is essential as learners are more likely to recognize the relevance, and even urgency, of learning the course content and process in order to achieve desired outcomes (such as learning the course content, developing group collaboration skills, involving the community, solving the problem, etc). As learners understand that course content will be attached to a real-life problem for the purpose of solving the problem, transference and reinforcement of learning is more likely to occur.

## What Does the Problem Look Like?

The problems of greatest utility in PBL are "ill-structured" problems. Ill-structured, or ill-defined, problems can take a variety of shapes and sizes depending upon the kinds of activities and responsibilities of the learners. The most important part of the problem is that it is REAL (see Figure 1). Learners become highly motivated when they recognize that the problem is something they will need to solve as a practitioner. This way, learners exert "ownership" over the problem and use the PBL process as a tool to solve real-world problems.

Learning problems must be  
**REAL:**  
**R**elevant  
**E**ngages Learner  
**A**ssorted solutions expected  
**L**earning objectives are clear

*Fig 1*

There are other distinguishing characteristics of ill-structured problems. PBL problems should be complex. It is important that there are numerous possible solutions because these



scenarios mimic real-world problems and encourage creative problem solving. Instructors need not know all of the viable solutions. The problem should not contain too many pieces of critical information that might provide too many easy answers. They also should not lend themselves to formulaic answers with rehearsed solutions. The best PBL problems lead learners to a vague understanding of the situation with no sure pathway to a solution. This provides for a necessary learning struggle, and allows them to recognize the need to acquire skills, procedures, and knowledge to address their learning obstacles built within the problem.

## The PBL Process: 5 Steps

Following presentation of the ill-structured problem, groups commence their educational journey through five steps. Because learning is not always linear, it is important to realize that progression through the PBL steps may proceed both forward AND backward. Regardless, all groups should begin with the critical first step, Ideas.

### Step 1. Ideas: Consider the problem



Goodwin Watson spoke of the readiness to learn when there is an “...existing experience to permit the new to be learned” (Watson, 1960-61). In other words, we only learn in relation to what we already know. During this first step, groups capitalize on this idea by sharing what they already know in relation to the problem. They propose numerous ideas, garnered from personal and professional experiences that they believe might solve or illuminate aspects of the problem. There are no “right” or “wrong” ideas in this step. As learners navigate through the problem solving process, they will discover why many of their original ideas were wrong, thus providing good opportunities to “fail forward” from their mistakes and enhance their learning.

### Step 2. Known Facts: What do you know about the problem?

After possible solutions have been offered, learners create a list of everything they know about the problem, such as the facts given in the ill-structured problem. In the Westfield Park example, problems occurred during the daytime and nighttime. It is important to add this fact to what is known about the problem, so learners will not mistakenly focus solely upon daytime problems, for instance. All facts need to be considered, and even listed, before rushing to conclusions.

*Photograph 4: There are five PBL Steps:  
Each one brings you closer to your goal*

### Step 3. Learning Issues: What do you need to know?

This step requires learners to identify what they need to know, or do not already know, about the problem. This step often requires a lot of instructor facilitation, as learners do not know what they do not know! For instance, using the Westfield Park problem, learners would cite as a known fact that “walkway exits lead to surrounding streets.” A corresponding learning issue might include “we need to know how multiple access points around parks can affect crime, problems, and fear.” Without disempowering learner initiative, instructors should guide learners to resources on relevant CPTED topics such as access control and neighborhood permeability. This way, the learning of access control is attached to a real-world problem, thus enhancing the likelihood of transference. Because learners exhibit a range of learning styles, instructors should encourage delivery of material in a variety of ways, such as PowerPoint presentations, discussions, cooperative learning exercises, role-play, and others. At the end of this step, groups should be armed with enough knowledge, both “old” and “new,” to try and solve the problem.



*Photograph 5: PBL instructors maintain an active role in the learning process, including knowing when “letting go” is needed*

### Step 4. Action Plan: Solving the problem

The action plan is the mechanism that allows learners to “put into action” their learned knowledge. This is the response, or solution, to the ill-structured problem with which the group began. Some critical questions that are often asked during this step are:

- What specifically will you do?
- How will you operate the plan?
- What resources will you need?
- Is there community buy-in?

The action plan may take many forms, such as papers, presentations, charettes, community building projects, etc., and may also have a wide range of time scales.

### Step 5. Evaluation: Is the problem solved?

The action plan should be evaluated, regardless of whether it is a simple classroom presentation, or 23-month comprehensive re-design of Westfield Park. Both the product AND the process need evaluation. Learners need to revisit the learning process to recognize their strengths and weaknesses, to learn “how to learn.”

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## A CPTED Curriculum: Problem Based Learning in Brandon, Manitoba

In May 2003, twenty-five professionals from several Canadian provinces gathered in Brandon, Manitoba, for a five-day course in CPTED using PBL. Participants came from a wide range of professional backgrounds:

- Planning
- By-law enforcement
- Municipal and military police
- Landscape architecture
- Building and fire inspections
- Parks management
- Community development
- Community services
- Emergency services
- Downtown business improvement
- University campus facilities management
- Riverbank personnel.

Each learner had 2 problems to complete during the course.

1. **The Course Problem:** The instructor handed this problem to each learner at the beginning of the course. The problem begins like this:

You are a practitioner engaged in the business of public safety attending a course in CPTED. To enhance your professional skills, you need to learn the concept of CPTED. You have 5 days to learn how to apply, describe, and ideally, evaluate the appropriateness of this material for your work. You must work in groups and select a real-world local problem that you will use as the context through which CPTED is learned.

The Course Problem continues by addressing the need to learn CPTED strategies such as 1st and 2nd Generation CPTED, techniques such as lighting, landscaping, architecture, planning, and when to properly apply these strategies and techniques using risk assessments. The primary objective of the learner is to solve The Course Problem. This problem is ill-structured (think REAL) and can be solved in numerous ways. The course is not successfully completed until the learner solves the Course Problem.



2. **The Real World Local Problem:** This problem serves as a vehicle to help solve the Course Problem. Groups select their own problem, and with the instructor's assistance, craft it into an ill-structured problem. This problem can take a variety of shapes and sizes, depending upon the needs of the group. The Westfield Park problem is a good example of a real world local problem because it allows learners to address the learning issues gathered from the Course Problem, and apply them to an existing environment in need of CPTED attention.

Following presentations of the problems, each group began the PBL steps while focusing first upon the requirements of the Course Problem. After generating many possible **Ideas** (Consider the Problem) about solving the Course Problem, they ventured to step two, **Known Facts** (What facts do you know, or have you been given, about the Course Problem?). One of the "knowns" about the Course Problem is the need to understand the role of lighting in CPTED. A few of the groups feared that lighting inadequacies existed in their local problem. Following the listing of all the Course Problem facts, they returned to lighting as a learning problem in need of engagement in the local problem. As an example, the groups followed this type of PBL process to address lighting.

Step 1. Ideas (Day 1): Many ideas were generated on how to solve the Course Problem.

Step 2. Known Fact (Day 1): Lighting

Step 3. Learning Issues (Day 1-2):

- How does lighting influence crime and fear?
- Is there existing research on CPTED lighting?
- How do we (individuals and group) best learn about lighting?

Step 4. Action Plan (Day 2-5)

- As we are active and visual learners, we will have the instructor conduct a nighttime lighting walkabout and we will perform an in-class lighting design exercise, followed by a brief discussion facilitated by the instructors.
- Our group will then return to the site of our local problem and apply the new knowledge about lighting.
- We will present a report to the class and local community containing, among other CPTED recommendations, a proposed lighting re-design of the local area. A written report containing visuals and other information will be sent to the necessary stakeholders.

Step 5. Evaluate Product and Process (Day 5)

- Did the lighting exercises and report fulfill the learning issues for lighting? If not, what do we need to do to accomplish this learning need?
- Did we use the PBL process effectively for lighting?

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The final requirement is the evaluation of the entire course. Key tasks include answering whether the Course Problem was solved. In a 5-day course, the Local Problem may not get solved given time constraints. However, if the Course Problem is not solved learners then need to decide how they will address existing learning issues. After self, peer, group, and instructor assessments are performed the learners make one last return to their original Ideas. Here, they assess and reflect upon the usefulness of the PBL process to surmount early anxieties and incorrect Ideas. If a journal is kept during the course, this sort of reflection makes for great learning reinforcement and often a rewarding last entry.

At the conclusion of the Brandon CPTED course participants delivered informative and dynamic presentations to their peers and several city council members that revealed how both 1st and 2nd Generation CPTED can alleviate numerous local community problems. The learners universally applauded PBL as a method that was challenging, inclusive, participatory, and fun. Perhaps more telling of the efficacy of PBL was the learners' belief that PBL was something they wanted to use in their communities as a tool to encourage participatory action among community members.

In less than one year, the participants who live and work in Brandon have made tremendous progress with the implementation of CPTED in their city. Such achievements include:

- The creation of Urban Design Standards and Design Guidelines that include a description of the risk assessment process and CPTED principles. CPTED ideas are embedded throughout these materials.
- CPTED principles are being built into the Development Plan.
- CPTED principles, though not always stated formally, are used in the review of developments that need Council approval. This applies to all kinds of development.
- A land owner of several rental properties downtown has expressed interest in CPTED and how it can help him “clean up” his properties.
- The Argyle Park work that started as a “Real World Local Problem” in the course has continued. The park planning process has involved a lot of work with neighborhood kids and adults.
- One planner sits on the Technical Advisory Committee for the Planning Law Review for the Province of Manitoba. She indicates that she is actively looking for legislated opportunities for municipalities to include the CPTED risk assessment process in zoning by-laws, etc.
- Brandon City Council, in particular, is now using CPTED terminology. Among other benefits, this confers credibility to CPTED initiatives that was once not available.

- A few participants have brought the CPTED risk assessment to a downtown school that is having difficulty with vandalism and drug issues on the school grounds after hours.
- Brandon and the surrounding area will be designated Manitoba's First Safe Community on June 1, 2004. CPTED is one aspect that the initiative is supporting. (Canada has a national foundation that is quite rigorous that established "Safe Communities" based on a variety of criteria.)

## **CONCLUSION: A FINAL APPEAL**

Professionals and academics have been teaching CPTED for approximately thirty years. As CPTED gains popularity in a variety of first, second, and third world based consulting practices and university classrooms, it is essential that we honor the needs of the learners of CPTED. So often in CPTED, as is the case with many disciplines, too much of the focus is on what we learn, and very little on how we learn. Yet few disciplines are as enveloped with the mission of community safety and wellness as is CPTED, making the education of CPTED learners critical in the achievement of community health. One need only review the essence and ethics of 2nd Generation CPTED to discover this (Saville and Cleveland, 1997). Therefore, if we intend to educate others to the benefits of CPTED, we must take full inventory of how this message is received, and adjust our delivery for the learners. Problem Based Learning, guided by the spirit of adult learning, is one way to achieve this worthy goal. Let's consider it our mission.

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