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GED® AND YOU

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Section 1

Introduction: GED as Project

What we know about teaching and learning expands daily. While the process remains somewhat mysterious, we do know that, for adults and children alike, sitting in rows, listening to an instructor and filling in worksheets is not the most effective way to learn content or develop the higher order thinking skills of analysis, synthesis and evaluation.

Many GED learners entering the classroom anticipate learning their math, reading, writing, science and social studies in just that traditional style. However, *GED as Project* offers a different vision, embracing what we know about enhancing higher order thinking skills, using the content and material of the GED.

What Is GED as Project?

In its simplest form, project-based learning involves a group of learners taking on an issue close to their hearts, developing a response, and presenting the results to a wider audience. (Heidi Spruck-Wrigley, 1998)

GED as Project gives instructors an approach to learning in the context of the GED. It is based on sound educational and cognitive research that are valuable to adult basic educators and the GED 2002 learner. To implement this approach, we use Learning Projects to help the student achieve success on the GED. Each Learning Project is broken down into man-

ageable Inquiry Activities, helping the learner meet the objectives of each Learning Project and, ultimately, to meet the objective of passing the GED.

Project-based learning is a learner-centered, problem solving, inquiry- and skill-based experience that promotes analytical, creative and practical thinking, integrating content and skills. It allows for exploratory and discovery learning, where the learner constructs meaning for him/herself. For adults pursuing the GED, the often lengthy and complex tasks make a worthy project: GED preparation and skill acquisition. The projects are centered on the content of a GED practice test and the test-taking and thinking skills needed to succeed at passing the GED. Project-based learning recognizes the need for establishing background knowledge, linking learning to experience, achieving personal growth, and applying knowledge and skills to many different areas of our lives.

For the adult seeking the GED, many different aspects of achievement exist, often providing means to other ends, in addition to its being an end in itself.

GED as Project takes full advantage of the learner's desire to achieve the goal of passing the GED exam, placing the test and its content at the center of the project to be undertaken. Passing the GED is the context within which cognitive and problem-solving skills are developed.

Implicit in any project undertaken by any group are skills for structuring the interaction and pursuing the goals. A leader or a facilitator will almost always be needed. Initially, the instructor will design the Learning Projects and Inquiry Activities that make up *GED as Project*. As learners gain increasing familiarity with the approach, design and facilitation of the Learning Projects, learners and learning groups will gradually take on more responsibility for developing Learning Projects and Inquiry Activities.

All of us have pursued projects in our lives, both large and small. Like many projects, obtaining a GED is a more complex task than it may initially appear. Often, when adults enter a GED preparation program, they are not fully aware of all that is required to pass the test. Learners don't often know how the test is administered, how much time the test takes, what subject areas are addressed, how the subjects are tested, and what skills they will need to be successful. By pursuing *GED as Project*, learners not only come to understand the scope of the GED exam, they begin to develop the skills necessary to achieve academic success, building on and relating their efforts to the other successful projects they have pursued in their lives.



Thinking And Problem Solving

The revised content and approach of the GED 2002 expands the testing of higher order thinking skills, according to the GED Testing Service and other sources.¹ For instance, a marked increase in the use of graphics and visuals in the Math, Social Studies and Science tests requires both evaluation and synthesis of material. Throughout, more workplace-oriented documents and questions address life skills and problem solving. Further, questions in Language Arts-Reading favor analysis rather than literal comprehension. Science has a significant increase in application questions. Math will also introduce the use of calculators, standard grids and coordinate planes, all of which will require basic problem solving skills.

Therefore, preparation for the GED 2002 must center on not just knowing content facts, but on the understanding, application and analysis of the content material. Instruction must extend beyond recall of restricted content to develop broader, more transferable performances by learners in the test-taking situation, as well as in their everyday lives. The instructional approach offered in *GED as Project* attempts to facilitate that. The inquiry process focuses on:

- Asking questions
- Planning, assigning and performing the investigations
- Seeking to understand
- Sharing with others
- Reflecting and evaluating.

Each part of the process is essential to successful test taking, but, more importantly, all are necessary for successful living.

Successful Intelligence

What makes a person successful? How do successful people navigate life? Sternberg's theory of intelligence, or the Triarchic Model, posits three types of intelligence: analytic, creative and practical (Sternberg & Grigorenko, 2000), as follows:

- Analytical ability is used when a person analyzes, evaluates, compares and contrasts
- Creative ability is used when a person creates, invents or discovers
- Practical ability is used when a person puts into practice, applies, or uses what he or she has learned (p. 11).

Traditional schooling has long been strong in recognizing, developing and assessing analytic thinking; however, schooling has not routinely prized, recognized or developed creative or practical thinking. Yet all three are needed for success in life. Sternberg's research has shown that teaching to develop all three types of thinking can enhance performance on standardized and high stakes tests (Sternberg, 2000).

Adults who have not graduated from high school may not be academically inclined, but they have often become strong practical or creative thinkers. By adopting a Successful Intelligence approach to instruction, we will be encouraging learners to use their creative and practical thinking abilities, as well as developing the analytic approach in their efforts to pass the GED 2002.



Integration Of Content And Skills

Reading comprehension has long been presumed to be the basis upon which accomplishment in all other subject areas rests. Recent research in cognitive science suggests that to be most effective, skills need to be taught in the context in which they will be used, and that reading skills are subject-specific (Cromley, 1998). Reading for leisure is different from reading for information. Reading as a scientist, reading as a mathematician, or as a social scientist all utilize different skills. Mathematical reasoning in context or writing for a specific purpose will also utilize different skills. Consequently, we must better equip ourselves to understand and integrate the skills of reading, writing and mathematical reasoning within the content areas. We must not rely exclusively on decontextualized reading tests measuring reading levels, math tests measuring computational abilities, or simple writing samples to be reflective of a learner's skills, knowledge or ability. Performance on these measures does not necessarily transfer to other subject areas or contexts. To be effective, we must understand and teach subject- and context-appropriate skills in order to help the learner pass the GED.

GED as Project will introduce instructional approaches, strategies and activities that seek to integrate, not separate, the higher order thinking skills that transcend the five subject areas of the GED 2002, using inquiry-based, problem-centered projects derived directly from Official GED Practice Test items.



Section 2:

Learning Projects and Inquiry Activities



GED as Project is designed to give instructors an approach to learning in the context of the GED, based on sound educational and cognitive research valuable to adult basic education and the GED 2002 learner. To implement this approach, we use Learning Projects to help the student achieve success on the GED. Each Learning Project is broken down into manageable Inquiry Activities to help the learner meet the objective of each Learning Project and, ultimately, to meet the objective of passing the GED.

Project-based learning recognizes the need for establishing background knowledge, linking learning to personal growth, and applying knowledge and skills to many different areas of our lives. Traditional project-based approaches often use events or issues shared by the learners as the stimulus for the project. These projects are often large and complex, involving multiple tasks that may take weeks to accomplish. *GED as Project* suggests that you use GED practice test items as the stimulus. In so doing, you are taking the best of project-based, inquiry-oriented instruction and focusing it toward the most pressing desire for the learning group — passing the GED.

The Learning Project will focus on a larger issue or area that requires multiple Inquiry Activities to achieve. Learning Projects used in preparing for the GED will need to be short, targeted and focused.

For instance, the Learning Project entitled “The GED and You” on page 14 culminates in a learner-derived Action Plan to pass the GED. Arriving at the Action Plan requires the learner to investigate several things: his/her current circumstance and understanding of the GED, the details of the GED examination forms and process, the necessary studying and test-taking skills, and his/her own strengths and weaknesses in the context of the GED. Doing all of this in one Inquiry Activity would be difficult for most, so the project is made up of a series of Inquiry Activities, each focused on a single topic that makes up a part of the Learning Project.

Structuring Inquiry Activities

No rules determine how a project is realized, although all projects seem to progress through some common phases: identification of a problem or issue, preliminary investigations, planning and assigning tasks, researching the topic, implementing the project, drafting and developing a final product, dissemination, and evaluating what worked. (Heidi Spruck-Wrigley, 1998)

The first goal for learners engaged in this approach to instruction is to shift their view of taking the test from a distant outcome to a multi-faceted project. This is achieved in a variety of ways, but most directly by the instructor creating an environment for inquiry and group learning around the shared interest of the group: passing the GED. As previously indicated, *GED as Project* introduces five phases for each Inquiry Activity, whether that activity is a ten-minute or a two-week inquiry. How these phases are accomplished in each subject area will vary slightly, but once the approach is established, the instructor and the learners will begin to see how the process of *GED as Project* works, and they can begin to modify it to meet their own needs. The key is to maintain a point of view that has both the teacher and the student asking and answering questions.

The five phases of the Inquiry Process are shown in Figure A.

Figure A

Template For The Inquiry Process

1. Identifying The Problem
2. Becoming Familiar With The Problem
3. Planning, Assigning And Performing Tasks
 - Doing The Work
 - Reaching A Conclusion
4. Sharing With Others
5. Reflecting, Extending, Evaluating

(Note: This template will be adapted to the specific needs of the five subject areas.)

The Inquiry Process

1. Identifying The Problem

The instructor will want to initiate the inquiry by encouraging learners to explore what is being asked in the Inquiry Activity: What is the problem? The key is to inquire, to ask questions, to become comfortable with seeking as an activity for learning. For *GED as Project*, the instructor, not the group, initially identifies the focus and sequence of Inquiry Activities within a subject area to form a Learning Project. “GED Math and You” in Volume II is an example of a series of Inquiry Activities that make up a Learning Project. Most of the Inquiry Activities within the five subject areas will use Official GED Practice Test items as stimuli for the activities.



2. Becoming Familiar With The Problem

The familiarization step goes into more depth about the problem proposed by the test item itself. Research, analysis, exploring the required reading, or restating the problem are some effective ways for learners to begin to understand what is being asked and to share that understanding. Learners may also draw pictures or diagrams, use manipulatives, or even act out their understanding of the problem. Familiarization helps learners develop the context of the problem and establish a frame of reference. When familiarizing themselves with a problem or issue, some groups may work on one level while other groups work at another, or multi-level groups may pursue a problem together.

Familiarization may also be an individual activity. The instructor, the learner, or learner group may decide how to become familiar with a problem. In time, learning groups may become more involved in decisions about how to become familiar with the problem.

3. Planning, Assigning, And Performing Tasks

Planning

Once the individuals, groups or class complete steps 1 and 2 of the Inquiry Activity, the class will be divided into groups, if that has not already taken

place. The learners are given Steps 3 and 4 of the Inquiry Activity and will plan who will do which tasks and how they will be accomplished. These tasks will include how the project is disseminated to others.

Assigning

Assigning the tasks in the Inquiry Activity to the group members is governed again by the group's knowledge of the content, one another and the process. Generally, assigning tasks is a group function, monitored by the instructor.

Performing

After the planning and assigning is complete, the group members start performing, actually doing the work.

The learners perform their group-assigned tasks by answering the instructor or group directed questions. These tasks might be broken up in the various subject matter templates into more than one step. In math, for instance, estimating and developing two ways to solve the problem are two steps that are embedded in this task. Research (using materials made available in the classroom or elsewhere) can be a focus of this portion of the task.

At this point, the students draw conclusions about the problem they have worked. To integrate writing throughout the project, we suggest that the instructor have the students write their results individually or as a small group. In this way, the instructor introduces writing not as an academic subject to be learned in isolation, but as a tool in developing a final product. In math there may be two steps for reaching a conclusion: compare your answer to the estimate and match the problem to your experience. Other subject areas might have different steps for reaching conclusions.

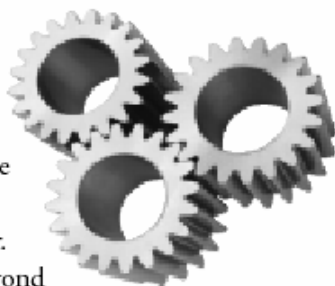


4. Sharing With Others

This is an activity that every GED content area will have. Sharing reinforces the learners' making meaning for themselves by communicating their understanding of what they have accomplished. Having groups share their activities puts them in the role of teaching others.

Learners will gain practical skills in using written, oral, or visual methods that can improve their test taking abilities. Organizing ideas and communicating them to others can be powerful ways to learn.

The group should discuss ways to communicate the conclusions reached in Inquiry Activities. A variety of traditional and non-traditional methods of sharing with others should be encouraged. How the work gets assigned within the group is a function of the group and not the instructor. Sharing with others goes beyond the sharing and exchange that went on in the group to plan, assign and do the work.



Reflecting, Extending And Evaluating

Reflecting gives the learners the chance to think about their experience and to learn both from the process and from the material being discussed. Extending gives the learners a chance to be both creative and practical. This provides further opportunity for them to integrate the material with other learning, to transfer what they learned to practical, everyday situations, and to be creative in that transfer. Through evaluation, the learner begins to learn how to learn, to determine which approaches work best for him/her in what situations, and to begin to build a collection of learning strategies to call upon in a variety of circumstances.

Reflecting, extending and evaluating what was learned and what worked can be very broad and can include any of the following questions for the learner.

Reflecting: Think about what you learned

- What did you learn that was new to you while working on this Inquiry Activity? (an analytical question)
- How has this Learning Project helped you focus on passing the GED? (an analytical question)

Extending: Extend what you learned to new situations.

- What kind of connections do you see among the concepts explored so far in this subject? (an analytical question)
- What did you learn in this Inquiry Activity that was similar to other Activities you have done? (an analytical question)
- Can you invent a test question of your own? (a creative question)
- Create a situation where you are in charge. How would this subject help there? (a creative question)
- How might you use what you learned in your home life now? (a practical question)
- How might you use what you learned in your work life now? (a practical question)

Evaluating: Assess what you learned and how you learned it.

The evaluation process is similar to the reflection process but tends to be more personal to each learner. These questions tend to be analytical, following Sternberg's Successful Intelligence model.

- What strengths of mine were apparent during the Inquiry Activity?
- What weaknesses were exposed, and what can I do to correct or compensate for them?
- How can I correct a perceived weakness?
- Do I need to commit to attending class regularly, schedule more time to complete homework, and/or complete my homework?

As this in-depth review shows, the inquiry process is dynamic and can be applied to different situations in multiple ways.

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