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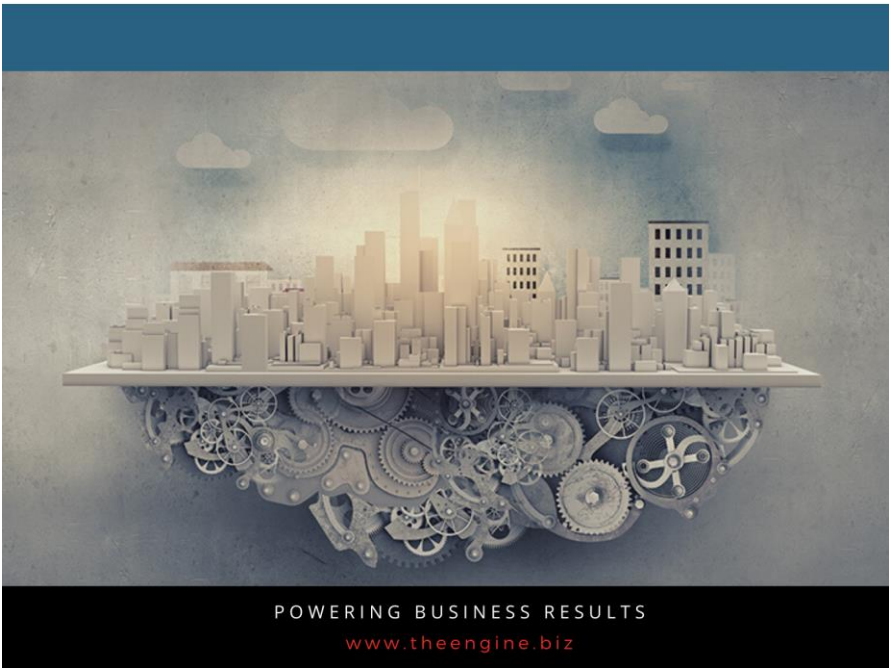
Adult Learner

Physical Skills



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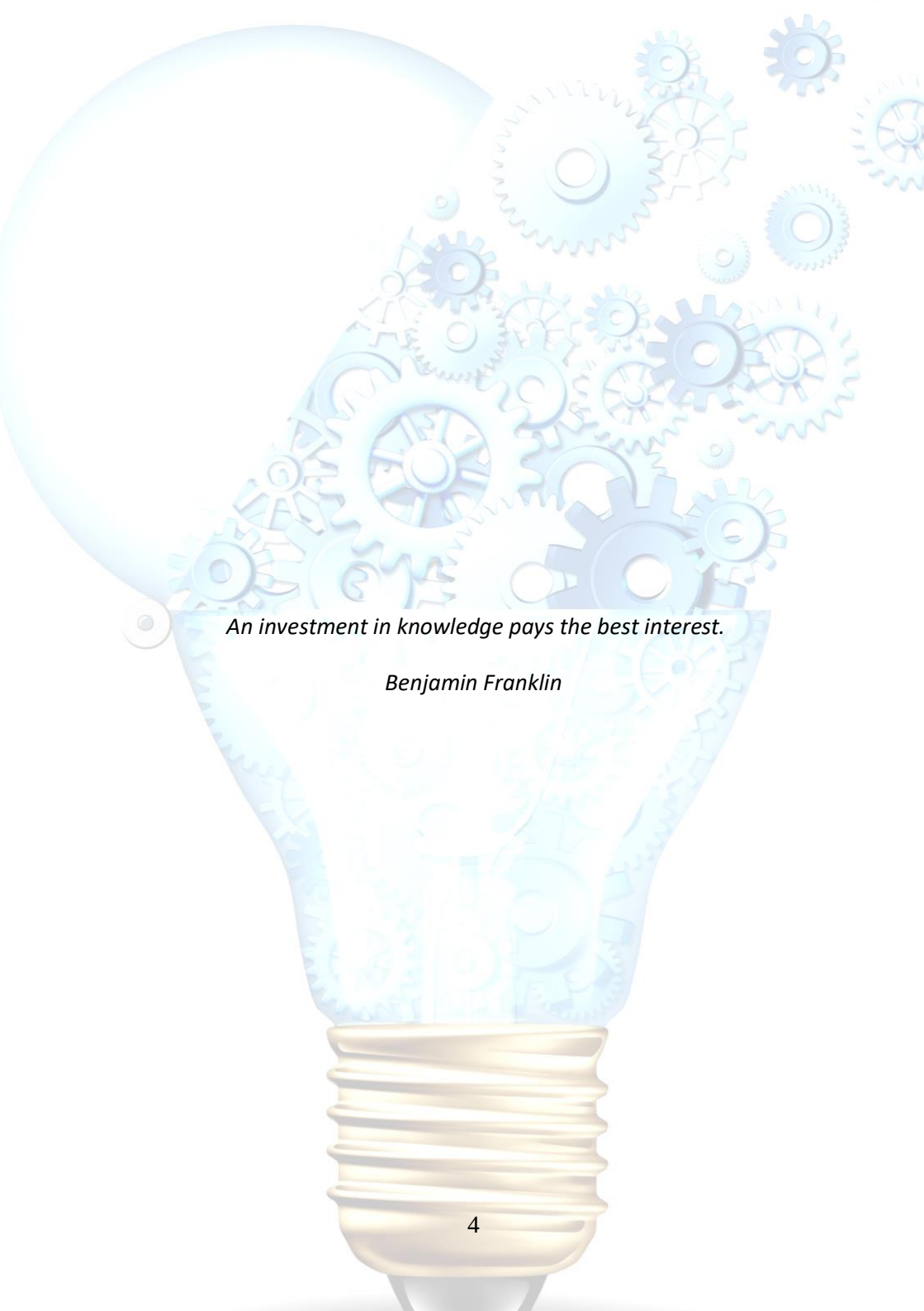


An investment in knowledge pays the best interest.

Benjamin Franklin

Preface

Bloom's Taxonomy is not just for elementary school teachers. The three domains of the taxonomy apply to adult education as well. In this book, we will pay attention to the psychomotor domain. This is the domain of action and physicality. It is important to remember that psychomotor works together with the other domains when implementing it.

The brighter you are, the more you have to learn.

Don Herold

Chapter One: Bloom's Taxonomy

Bloom's Taxonomy has been a basis of educators since its inception. Teachers of both children and adults need to be aware of the theory's history and how it has changed over the years to implement it and its three domains. In this book, the focus is on the psychomotor domain.

Bloom's Theory

The focus of Bloom's theory is the learning hierarchy. In this hierarchy, the students will master a level of the hierarchy before moving on to the next. Like walking up a flight of stairs, students eventually take the steps to complete the hierarchy. As they master each level, they discover the ability to implement learning strategies and improve their skills. In this theory, teachers use the taxonomy to guide the students through to the higher levels of thinking and understanding. These three domains work together to create learning objectives, guide activities, and develop effective assessments.

Each domain identified is broken down to levels or categories with specific behaviours, activities, and example words that identify when students have mastered skills from each level of the domain.

History

Benjamin Bloom was an education psychologist. He and other experts developed Bloom's Taxonomy of the Cognitive Domain in 1956. The purpose of the taxonomy was to establish educational goals for students to perform evaluations of their performance. The three domains that Bloom and his team discovered were cognitive, affective, and psychomotor. The original taxonomy is:

- Evaluation
- Synthesis
- Analysis
- Application
- Comprehension
- Knowledge

Other domain information would follow, including the Affective Domain in 1973 and the Psychomotor Domain in 1972. The original Cognitive Domain was updated.

New Understanding

Lorin Anderson and David Krathwohl revised the original taxonomy of the Cognitive Domain to be more action oriented. The updated version removes knowledge, comprehension, and evaluation and adds remembering, understanding, and, creativity.

- Creating
- Evaluating
- Analysing
- Applying
- Understanding
- Remembering

The Cognitive Domain is used in most learning activities and blends with learning in the Psychomotor Domain and the Affective Domain

Definition

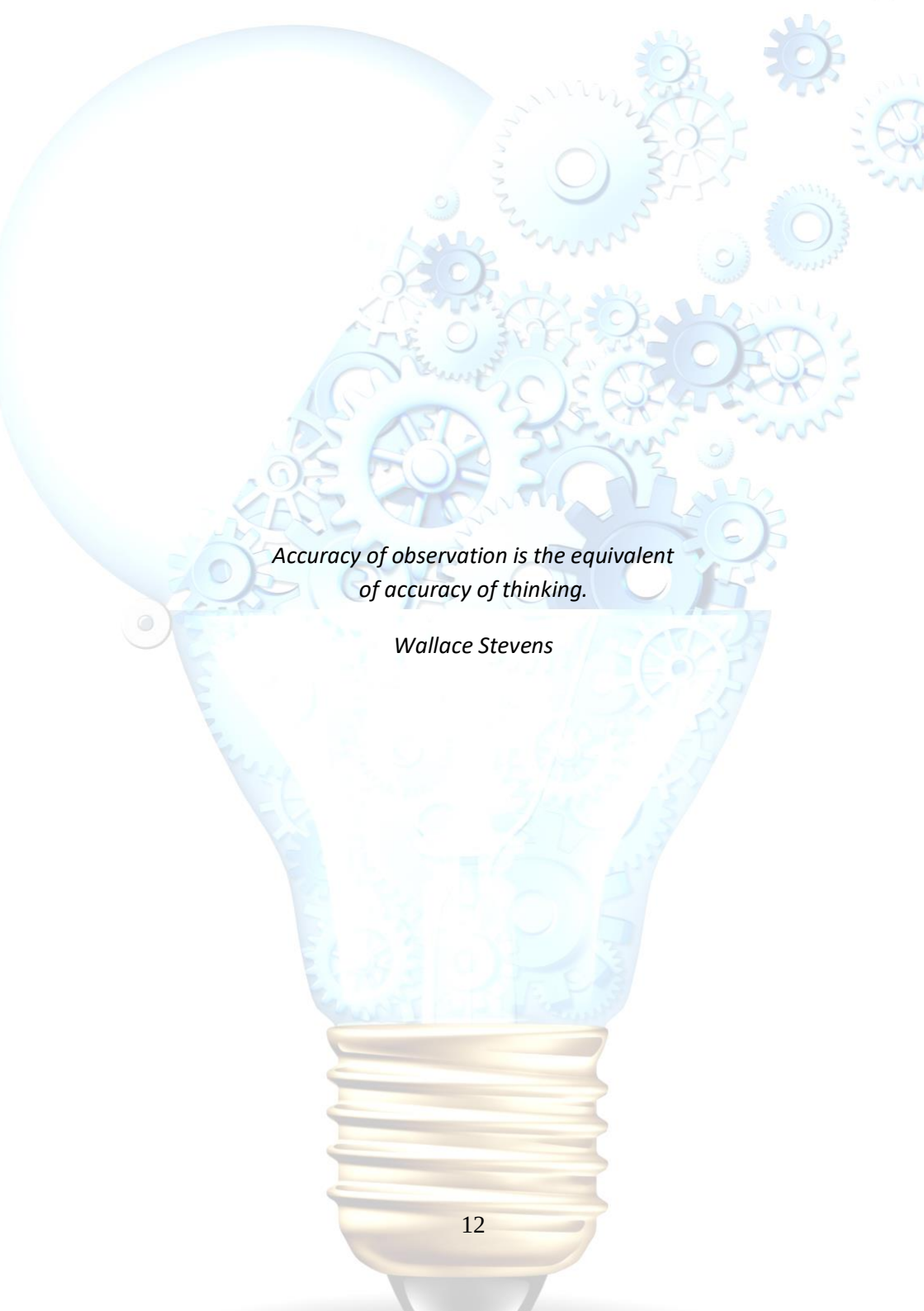
The Psychomotor Domain addresses the use and development of motor skills. It is an often-overlooked domain sacrificed in favour of the Cognitive Domain. Simpson developed the first understanding of the psychomotor domain in 1972. The original Psychomotor taxonomy:

- Origination
- Adaptation
- Complex Overt Response
- Mechanism
- Guided Response
- Set
- Perception

Other theories followed which we will address in later chapters. In this book, we use a combination of different taxonomies.

Practical Illustration

Drew was training the new IT employees how to troubleshoot the new company system. He provided the class with written instructions to follow during his lecture. After the class, Drew knew that he would be inundated with calls asking questions about the material. He complained to his friend, Alexa, about how the class was a waste of time. She asked him if he allowed his participants to do any hands-on learning and explained that adding the psychomotor domain might improve understanding.



Accuracy of observation is the equivalent of accuracy of thinking.

Wallace Stevens

Chapter Two: Observation

The first stage of the process we will look at is observation. This is similar to Simpson's perception stage. Here, students are exposed to the activities that they will later imitate. It is important to be familiar with the behaviour, actions, example verbs, and implementation necessary to support students in their progress through the observation stage of this domain.

Behaviour

The behaviour of the observation stage takes place mentally. The students who exhibit observation are actively engaged in learning the new activities. In the workplace, reading instructions and following along with a presentation would be an example of observing behaviour. Taking notes would also indicate observation. People who do not pay attention during physical tasks are not demonstrating active participation. This is the behaviour that students will build on to develop the next step in the learning process.

Actions

Certain actions will help indicate students understand and implement the observation. Students who show the following actions are demonstrating mastery of the observation stage.

- Watch expert in person
- Watch examples online
- Use instruction books

The list above is not comprehensive, but it is appropriate for students of all ages, including adult learners. These actions should align with the example words that are used to determine learning outcomes. Being familiar with example words will help expand your understanding of the observation stage of the psychomotor domain.

Examples

Keywords are used to define learning outcomes. These example words are active verbs that teachers use in their objectives and goals for the class.

These example words help teachers assess performance and determine what level of mastery students have reached. These different domains work together so that you will see connection in the examples between them.

Commonly used keywords for the observation stage of the psychomotor domain include:

Outcomes begin with these action verbs that help define performance measurements.

Implementation

When implementing the learning objectives at the observation phase of the psychomotor domain, the goal is to design activities that help students observe and understand physical actions. In adult learners, this requires providing them with the opportunity to learn physical activities from observation. Electronics, machinery, or any other manual training should be demonstrated. This type of training includes the in-person demonstration, online demonstration, and instructions with images, such as videos in a presentation. The goal is for people to observe and learn proper techniques, which requires the setting to be undistracted.

Practical Illustration

Jonathan was responsible for teaching new employees how to operate the machinery in the warehouse. He always demonstrated the actions for each machine once as he explained it. Jonathan did not have very much time, so he took groups on tour. He noticed that only a few did not require further instruction. After training one day, a young man told him that he had trouble hearing and seeing how to operate the equipment because the group was too large, and the background noise was too loud.

Imitation cannot go above its model.

Ralph Waldo Emerson

Chapter Three: Imitation

The second step of the psychomotor domain is imitation. Once students are practicing observation, they should be able to imitate what they have seen. It is necessary to be familiar with the behaviour, actions, example verbs, and implementation necessary to support students as they develop the imitation stage of this domain.

Behaviour

Behaviour in this stage requires the students to begin copying what they have observed. At this point, the students will attempt physical activities and begin their efforts to master an action, so they will not act with precision. Student behaviour should be monitored at this time for the safety of everyone, but they should take some initiative in their actions.

Actions

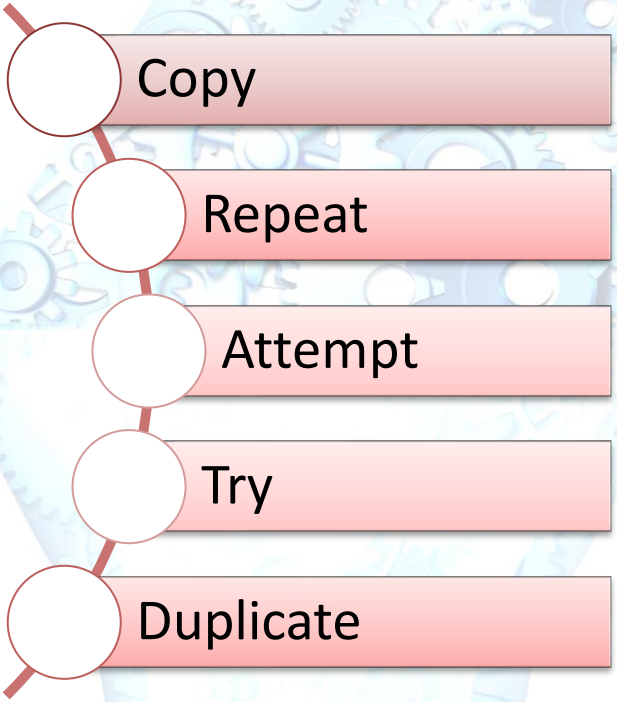
There are certain actions that will indicate students are successful in the imitation stage. These actions require the students to demonstrate that they have the ability to apply what they observed. Examples of actions that demonstrate the students' ability to imitate:

- Copying actions
- Repeating activities
- Imitate processes

These are not all the possible actions, but they indicate beginning new actions. These actions should align with the example words that will be used with learning outcomes. Being familiar with example words will help better your understanding of student responses.

Examples

The keywords or example words that explore how students respond at this level of the psychomotor domain are necessary of the teacher objectives to determine and assess students' performance. These example words include:



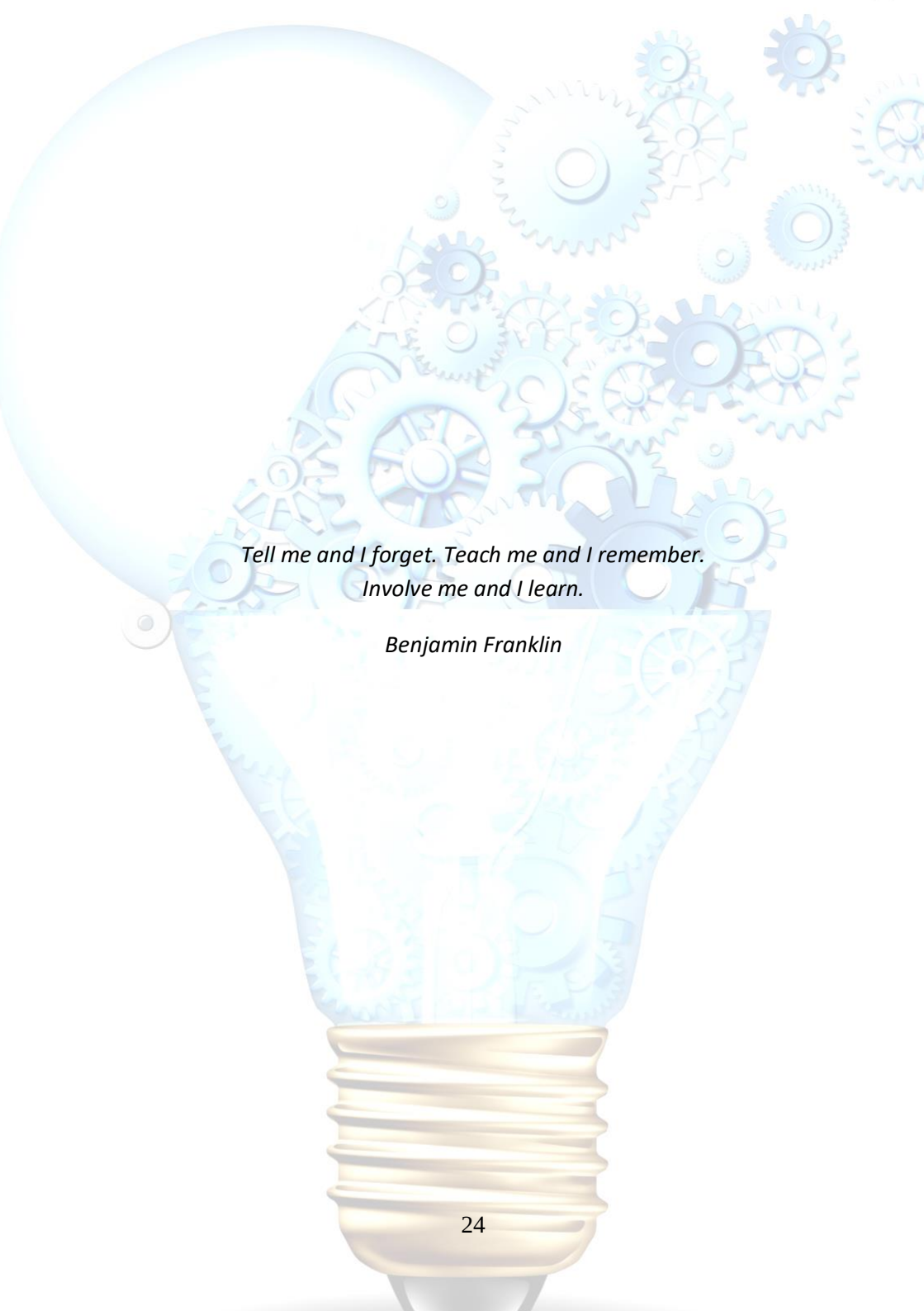
When establishing keywords or phrases, it is necessary to use action verbs to begin.

Implementation

When implementing the learning objectives at the imitation phase of the psychomotor domain, you must give students the time and resources necessary to practice what they saw. Adult learners will require those activities to be designed with their skill levels in mind. An example of effective implementation would be, having students use new software to copy a trainer. At this stage, instructors should observe the student and provide feedback.

Practical Illustration

Liv and Chase were teaching a class in home brewing. They decided to begin by providing the students with the opportunity to watch them create different recipes and take the recipes home with them because the class was so large. The follow-up surveys were mediocre. Liv discussed creating a smaller class that allowed the students to develop hands on experience working with the recipes. Chase agreed to try something new, and 90 percent of the students gave the class a positive review. Other people began to sign up as referrals.



Tell me and I forget. Teach me and I remember.
Involve me and I learn.

Benjamin Franklin

Chapter Four: Manipulation

Manipulation follows imitation in the psychomotor domain. At this point, the students build on skills of operation and imitation to take the next step. It is important to be familiar with the behaviour, actions, example verbs, and implementation necessary to support students as they develop the manipulation stage of this domain.

Behaviour

At the manipulation stage, the student behaviours change to build on their skills by using them without direct observation. These behaviours indicate that students have grasped the basics from the previous stages. For example, a student would be able to follow written instructions for a cake in a baking class. Remember that at this stage, students still need instruction and guidance so that they can be successful and move forward.

Actions

The actions that show manipulation are still guided with the help of instruction. These actions require basic knowledge. Examples include:

- Complete written instructions
- Follow oral instructions
- Finish a step from memory

These are not the only actions that demonstrate student manipulation, but they are typical examples. The keywords should align with the actions in the learning outcomes. Being familiar with example words will help you in your understanding of manipulation and its evaluation.

Examples

Example words or keywords will help identify successful mastery of manipulation in the psychomotor domain. These terms are used in teacher objectives to assess performance.

These example words include:

When using keywords with goals and lesson planning, it is necessary to start with action verbs to clarify actions and behaviours.

Implementation

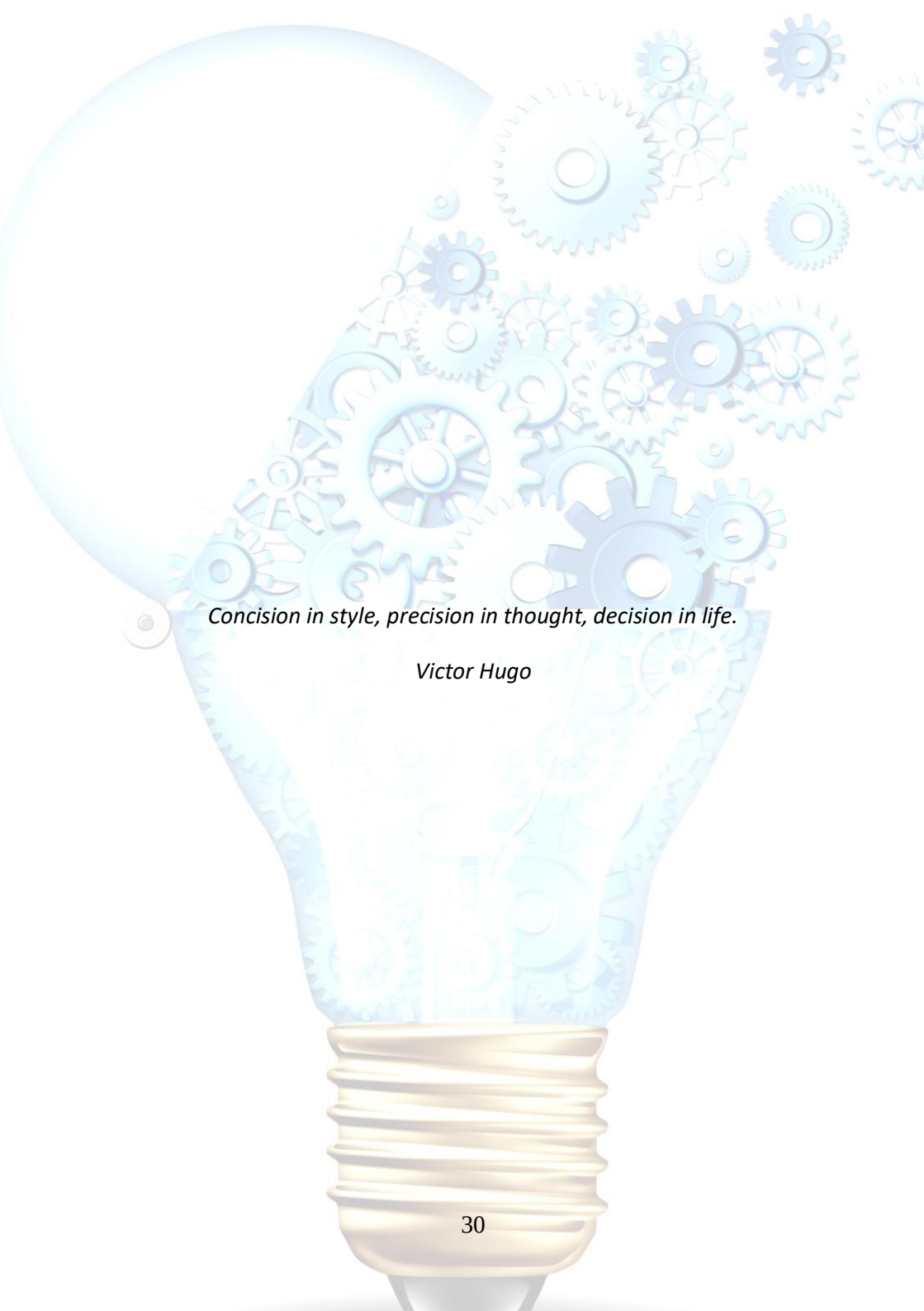
When implementing the learning objectives in the manipulation phase of the psychomotor domain, the goal is for students to follow instructions so that they can act on their own in the next phase. Activities should be broken down into steps for easy understanding.

Guided practice and feedback are beneficial for manipulation. The student should be given the opportunity to develop different steps or complete skills. Instructors need to avoid the taking over for students and allow them to do the work for themselves.

Practical Illustration

Elliot was teaching a fire safety course at work, which included prevention and action. He typically explained how to exit and use fire extinguishers safely in his presentation. Most of the time he saw a sea of glassy eyes staring at him without expression. Even he was bored by the slide show.

His friend Margo told him about a fun workplace safety training at her job. Elliot was surprised by her statement. He was not used to people enjoying training. She said that she got to practice using some of the emergency equipment, including the fire extinguisher.



Concision in style, precision in thought, decision in life.

Victor Hugo

Chapter Five: Precision

At this stage, students gain the ability to perform actions with greater skill. Precision builds on the skills of manipulation as students take on more control in their actions. Specific behaviours, actions, and examples accompany the stage of precision so that you recognize when students demonstrate the necessary abilities.

Behaviour

In the precision stage, students move forward to begin their mastery of tasks. They should be able to understand what steps have been done correctly and which ones need to be reworked. This type of behaviour involves the performing tasks without supervision. Students who do not work alone are not demonstrating precision in their behaviours. Additionally, the students' work will show a clear understanding of how each task needs to be completed.

Actions

The actions in the precision stage require the students to take actions on their own. Some of these actions would include:

- Practicing the process alone
- Repeatedly practice the skills or processes
- Teach other people basic steps
- Improve speed and accuracy

The list of actions is not complete, but they are a good starting point. The keywords and learning outcomes at this stage should align with the student actions and behaviour. Being familiar with example words will expand your understanding of analysis and recognize behaviours that students express.

Examples

Example words or keywords are terms that predict and demonstrate how students display precision in the psychomotor domain. They are used in teacher objectives to determine and assess performance. These example words include:

When using keywords and goals in lesson planning, it is necessary to start with action verbs so that you can recognize when students are perfecting the precision level of the psychomotor domain.

Implementation

When implementing instruction for the precision stage of the psychomotor domain in class, you must require the students to practice on their own. An example of implementation from this phase would be having students rework a project that they did not complete correctly or in a timely manner. The focus of the precision stage is making sure that students have the ability to complete a skill correctly and without any support. As always, make sure that the students have access to the tools that they need for success.

Practical Illustration

Jean was leading a class in keyboarding. Jean focused on the basic rules of keyboarding to make sure that the class understood them. Her students seemed to reach a plateau in their progress. No matter how much she guided and coached them, they did not progress past a certain point. She contacted Ed, another teacher, to ask about his technique. Ed recommended that she leave her students alone to fine tune their skills and increase speed and accuracy on their own. After giving the class the opportunity to practice alone, she saw a vast improvement. One of the students was even helping others who were farther behind.

Learning is not attained by chance, it must be sought for with ardour and diligence.

Abigail Adams

Chapter Six: Articulation

Articulation builds upon the mastery found in precision. In this stage, the students have the opportunity to increase their creativity and blend the different skills that they have learned. Successful mastery is shown in the behaviour and activities that the students demonstrate both inside the classroom and outside the classroom.

Behaviour

Once students understand and develop precision, the next step is to develop the ability to integrate different skills sets. Their behaviour will show the ability to adapt their knowledge in a way that is not typical. Their behaviour should be independent and based on the skills that they have already learned. For example, a person who takes and alters a photo to change the colour, shading, etc. would be an incident of demonstrating articulation.

Actions

Actions at the articulation level display expertise. They also show creativity and the ability to blend their skills into new, unique activities. Actions that demonstrate articulation include:

- Coordinating actions
- Balancing actions
- Acting with consistency
- Creating a series of steps
- Acting independently

The list of actions is just the beginning, and they make a good starting point. The keywords and learning outcomes should closely align with the actions of the articulation stage. When you are familiar with example words, you will expand your understanding of articulations and better identify the actions.

Examples

Example words or keywords are terms explore how students demonstrate mastery of articulation in the psychomotor domain. These keywords are part of teacher objectives and learning domains to assist teachers in evaluating and assessing performance. At this stage, the students should show more creative independence.

Examples of keywords include:

- Customize
- Alter
- Create
- Modify
- Adapt
- Improve
- Combine
- Change

These keywords are just a few examples. When developing keywords, remember to make sure to begin with action verbs.

Implementation

At the articulation stage, it is still important to give students the opportunity to practice their new skills without guidance. Without the opportunity to work alone, it is not possible to develop articulation skills. For example, asking students to complete a creative project on their own show's articulation. The important to remember at this stage is giving students the opportunities to grow and develop their existing skills in creative new ways.

Practical Illustration

William was teaching his film class with Leslie. William focused on teaching camera techniques, and Leslie taught the computer aspects of the process. The students did well in the separate portions of the class, but they were not very good at working with both of the skills at the same time. Leslie and William always guided them carefully through the integration process. Their creativity was not self-directed.

They discussed the problem and realized that the students had been given no chance to express their own creativity because they were always guiding the students in their activities. After providing time to work alone, the students began to demonstrate greater abilities and self-expression.

The brighter you are the more you have to learn.

Don Herold

Chapter Seven: Naturalization

The final stage of the psychomotor domain is naturalization. At this point, the students should demonstrate their mastery of psychomotor domain. The behaviour and actions combined with assessment will provide clues to the students' success in the psychomotor domain.

Behaviour

At the naturalization stage, student behaviour will show that they have completely mastered the skills and activities that they were trying to achieve with instruction. Their behaviour that demonstrates naturalization would be the ability to play the piano well or keyboarding with a high wpm. Behaviour should be second nature at this point. They would not struggle or need the assistance of instructors to complete their tasks.

Actions

At the naturalization stage, students will be able to perform a number of different tasks in their skill set with ease. Since this is the top of the domain, you will be able to see how the other steps of the domain have been built on each other. The actions at this stage should be seamless and second nature. These actions include:

- Strategy of meeting needs
- Establish an approach
- Evaluate the purpose
- Create strategy for blending activities

At the point of naturalization, the students' actions will be able to demonstrate that they understand what they are doing.

Examples

Example words or keywords are the terms that teachers use to determine when students have mastered naturalization in the psychomotor domain. These keywords are implemented in teacher objectives and learning domains. They are also beneficial in assessments, which is necessary for naturalization.

Examples of keywords include:

This is not a complete list, but it is a good starting point. When developing keywords for your class, remember that you need to use action verbs.

Implementation

The implementation of the naturalization stage of the psychomotor domain requires assessment. At this point, the instructor should have an assessment that is created for the skills and activities that the students are performing. The assessment should be of the entire performance that the student is responsible for learning. Break each step of the action in the assessment and provide students with the feedback that they need to continue perfecting their abilities.

Practical Illustration

Darla's computer class was coming to an end. The students had demonstrated great growth, but she was not sure if they would be ready to move forward. She was a new instructor, and did not know how to determine if they mastered the content. She spoke to her mentor, Stacey. Stacey explained that Darla needed to assess the students as they perform different actions to establish whether or not they have developed the expertise that Darla is expecting.

Change is the end result of all true learning.

Leo Buscaglia

Chapter Eight: Versions of Psychomotor Domain

Different versions of the psychomotor domain have been created since its first inception by Simpson in 1972. Harrow and Dave both created their own models of the domain. They each have differences and similarities, but they all focus on the physical aspect of learning.

Dave's Theory

Dave's theory of the psychomotor domain makes up the bulk of the model we follow in this book. The main difference is that Dave's theory combines observation with imitation.

- Naturalization
- Articulation
- Develop Precision
- Manipulation
- Imitation

Dave's theory is more common now used more often than the original domain that was created by Simpson.

Harrow

Harrow's version of the domain is unique because it focuses on the specific physical behaviours that accompany the psychomotor domain rather than the intellect.

- Nondiscursive Communication
- Skilled Movements
- Physical Abilities
- Perceptual Abilities
- Fundamental Movements
- Reflex Movements

Reflexive movements are reactions while non-discursive communication is the ability to use physical movements as part of self-expression.

Simpson

We saw the different stages of Simpson's psychomotor domain in the second Chapter. It is the original theory and the basis of many others. The domain begins with perception or awareness, which is the ability to translate cues and make estimates of movement-based activity. The final stage of origination is similar to Dave's stage of articulation because they combine what they have learned to create new ideas and activations.

- Origination
- Adaptation
- Complex Overt Response
- Mechanism
- Guided Response
- Set
- Perception

Differences and Similarities

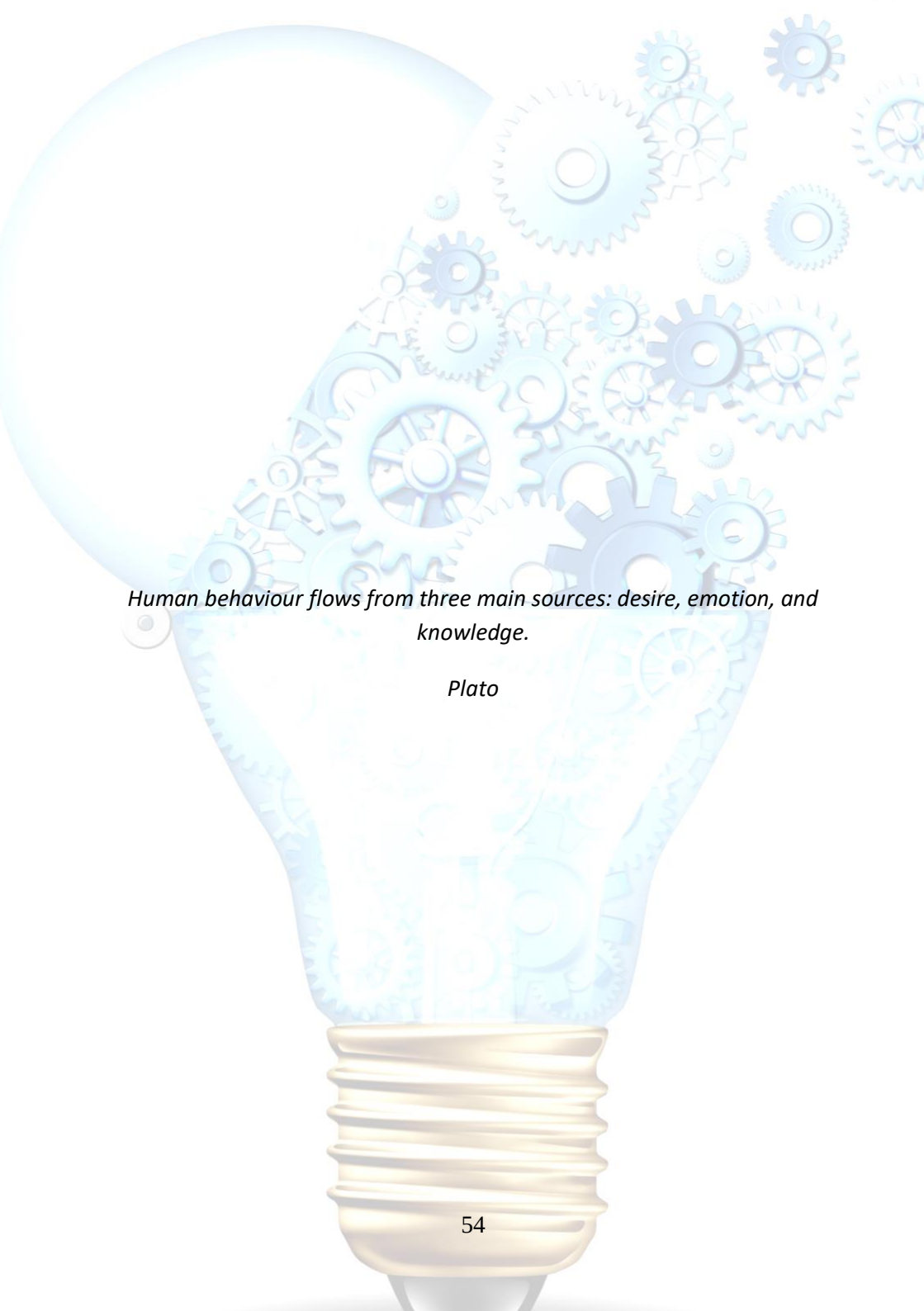
All of the theories of the psychomotor domain have their differences. Some focus on physical actions while others blend communication techniques. They are similar, however, in their instructional process. Each one follows the three main steps, which are:

- Imitation
- Practice
- Habit

The student is shown a task before practicing the skills and making it a routine. While the stages are unique, a similar instruction can be used to implement each one.

Practical Illustration

Jimmy and Liz were teaching a dance class. They decided to implement Dave's version of the psychomotor domain in the class. The class did not go as well as they expected. Some students did not move forward in the correct steps. They discussed the matter with another dance instructor. She said that she preferred to use Simpson's taxonomy because it focused more on the physical activities that dancing requires.



Human behaviour flows from three main sources: desire, emotion, and knowledge.

Plato

Chapter Nine: Psychomotor Measurements

Psychomotor abilities, like any other domain, require performance measurements. There are many different ways to measure psychomotor skills. In this book, the measurements that we will focus on are agility, precision, endurance, and speed. These measurements overlap and work together in the physical abilities that students learn.

Agility

Agility requires students to use coordination, balance, and reflexes. It is the capability to change direction or alter the body's position. Measurements focus on the different aspects of agility:

- Balance
    - Static balance is the ability to maintain a position.
    - Dynamic balance is the ability to move fluidly.
- Coordination occurs when students make movements into patterns.
- Reflexes govern the ability to move and act quickly.

There are different ways to measure agility. One popular method is an obstacle course because it requires students to demonstrate all of the skills at one time.

Precision

We have already discussed precision in an earlier Chapter. Assessing and measuring precision is a little difficult. Precision is not necessarily

accuracy. Accuracy is the exactness of the actions. Precision is the ability to replicate an action without any assistance while improving accuracy. The best way to measure precision is to compare the number of times a student completes an action correctly with the number of times an action is not completed correctly. This comparison is a useful rubric for evaluating successful precision.

Endurance

Endurance is the ability to perform a single skill for a lengthy period of time or repeatedly for a length of time. Endurance is tied to the physical strength of a student, and the length of time that a student is able to perform a skill without becoming tired. Endurance is something that will build over time and should be measured over the course of instruction. For example, the ability to hold a pose will increase with practice. Charting the length of time that a student performs an action will help establish measurements and determine student performance.

Speed

The rate at which a person completes an activity is the speed. For example, in running, the time and distance will determine the speed. Running is a simple example of a way to measure speed. The speed of different tasks can be measured in a similar way. Timing the rate at which students complete physical tasks will demonstrate their speed. It is all about timing.

The students' speed, agility, endurance, and precision all work together to determine how successful they are at completing tasks in the psychomotor domain.

Practical Illustration

Emily was teaching computer certification classes. One of her assessments was a typing test. She focused on the speed of their work as well as their accuracy. She was becoming frustrated with a couple of students who failed to show the necessary improvement. Her friend, Joy, discussed the situation with her. Joy advised that Emily pay attention to the student agility. Speed and accuracy will not improve without the necessary agility.

Plans are nothing; planning is everything.

Dwight D. Eisenhower

Chapter Ten: Skills to Consider when Planning

When planning classes that require the implementation of psychomotor skills, there are a few things that you need to consider, including actions that require gross movement and fine motor control. Verbal and nonverbal skills are also included in some versions of the psychomotor domain and need to be addressed.

Gross Movement

Gross motor skills are the skills learned in early childhood. They involve the use of major muscles and large movements that are necessary for normal functions, include walking or running. Gross movement can be incorporated into different skills taught. Pushing, pulling, throwing, and lifting are all examples of gross motor skills that could be used in adult lessons.

Gross motor movements are combined with fine motor control to improve coordination. The gross motor skills used in an activity should be planned ahead of time so that the body movement can be assessed.

Fine Motor Control

Fine motor skills are the activities that use small muscles. These are the skills that develop precision in activities. Cutting, typing, and folding are all examples of using fine motor skills. Eye-hand coordination is the key to using fine motor skills. Hand and finger movement control improves dexterity as well as strength and flexibility. Many activities that adults use in the workplace require fine motors skills and are typically blended with other skills such as communication.

Verbal

Verbal skills affect the ability to learn and demonstrate motor skills in the psychomotor domain, which crosses with the cognitive domain. Students learn how to perform the motor skills in the psychomotor domain through listening and responding to instructions. Without verbal skills, it is difficult for students to develop the knowledge that is necessary for them to grow in their physical abilities.

Nonverbal

Body language and expressions are included in Harrow's Taxonomy. The verbal instructions provide knowledge at one level while nonverbal operates on another level. Nonverbal communication allows students to interpret facial cues and other body language to help guide actions without the need for verbal conversations. These cues will work together with the verbal communication to guide motor activities and the psychomotor domain.

Practical Illustration

Frieda was preparing to teach an art class at the community centre. She planned on implementing the psychomotor domain in the class, but she was not sure how to address the different skill sets. She contacted her former teacher, Charles. He recommended assessing the skills of individual students at the beginning and making plans based on the levels of their motor skills, including gross and fine motor skills that need to be developed to make progress.

Frieda tried his approach and was able to give individual attention to her students and help them improve their physical and creative skill sets.

You have to develop your whole game to completion.

Isaiah Thomas

Closing Thoughts

- **Benjamin Franklin:** An investment in knowledge pays the best interest.
- **Aristotle:** It is the mark of an educated mind to be able to entertain a thought without accepting it.
- **John Dewey:** Education is not preparation for life; education is life itself.