Chapter 13.Instructional Models

***Overall Chapter Outcome***

To gain skill and knowledge in how to effectively choose and employ appropriate instructional models to facilitate student learning.

***Learning Outcomes***

The learner will:

* Explain the relationship between curriculum and instructional models
* Differentiate between teacher-mediated and student-mediated instruction
* Explain the purpose of, and how to use, guided practice and independent practice
* Describe and provide an example of each teacher-mediated instruction model
  + Direct instruction
  + Task / Station / Inclusion teaching
  + Teaching through questions
    - Guided Discovery
    - Problem Solving
    - Games-based instruction
* Describe and provide an example of each student-mediated instruction model
  + Peer tutoring / CWPT / Reciprocal teaching
  + Small group instruction
    - Cooperative learning
    - Teams
  + Self-instruction
    - Contracting
    - Personalized system of Instruction
  + Service learning

*The secret is not to worry about each person’s individual learning preference – that would be impractical – but to incorporate a planned cycle that covers them all. The more ways you teach, the more people you reach.*

Colin Rose

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| Definition of Terms Used Throughout This Chapter |

Chapter 13 is about teaching; teaching for student learning. Before we explore what this entails, we believe it is critical to bring curriculum models, instructional models and teaching and managerial skills and strategies into focus; what do they really mean? As noted in Chapter 9, curriculum models are focused, themes-based and reflect a specific philosophy. They intend to define a clear focus around the content, and aim toward specific, relevant and challenging outcomes. Once you have selected a curriculum model to develop and promote the type of learning you want young people to experience you will determine which instructional model will guide instruction and facilitate learning. The instructional model organises instruction and how students will interact with, and practice, content. An instructional model includes a number of non-negotiable strategies and methods used to plan, design and implement instruction. So, the major difference between curriculum models and instructional models is content focus versus instruction. As we noted in Chapter 9, a few of the curriculum models are also instructional models (e.g., Tactical Approach to Teaching Games; Sport Education) and in some instances a curriculum model might be linked directly to an instructional model (e.g., Adventure Education) to most effectively reach the intended outcomes. Regardless of which curriculum model or instructional model you select to guide student learning, there are a number of generic teaching skills and strategies that facilitate learning within both the managerial and instructional task systems and will be discussed in Chapter 14. Box # displays the curriculum models, instructional models and teaching strategies in graphic form.

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INSTRUCTIONAL MODELS

Various approaches for teaching physical education continue to be discussed, promoted, debated and analyzed. These approaches to teaching were first referred to as "teaching styles" by Muska Mosston (1966) when he introduced the spectrum of teaching styles. Mosston’s work suggests that teaching is based on a series of decisions teachers make about their teaching behavior and learners are invited to make about their learning behavior. As teachers and learners interact in the teaching / learning process, behavior patterns emerge; these define the different teaching styles that form the teaching spectrum. According to Mosston (1966) and Mosston and Ashworth (1994, 2008) a teacher's choice of teaching style is deter­mined by the series of decisions made, who makes them, how they are made, and for what purpose. These decisions are organized into three sets: decisions about intent that are made prior to face-to-face interaction (pre-impact), decisions about action that are made during a lesson (impact), and decisions about evaluation that will inform subsequent lessons (post-im­pact). Depending upon who makes these deci­sions, the spectrum is divided into two clusters of teaching styles: those that seek replication of knowledge and those that seek discovery or creativity of new knowledge.

The spectrum has been applied, studied and extended over the past forty years while additional approaches have been developed and promoted. Other physical education scholars have referred to these teaching approaches as instructional formats (Siedentop & Tannehill, 2000) or teaching strategies (Capel et al, 2001; Rink, 2009). Rink (2009) portrays teaching strategies as a delivery system that arranges the learning environment to allow all individuals to learn in a group setting reminding us that while teaching generally happens in groups, learning occurs within each individual. She suggests that every teaching strategy assigns roles to both the teacher and the learner for different teaching functions within a lesson; content selection, task communication, content progression, and provision of feedback and evaluation (Rink, 2009).

In this text, we refer to the various teaching approaches as ‘instructional models’. It is our contention that, an instructional model refers to the ways a teacher organizes and delivers instruction, provides practice to students, how the teacher and student roles change as a result of the different instructional models and how teachers and students interact with one another. We argue that a teacher does not always make a choice of a particular instructional model for an entire unit, or even class session. Rather the model will vary depending on the content being taught, the expected learning outcomes, the abilities and behavior of the students, the curriculum model within which the lesson is a part, how feedback might best be provided, and the decisions the teacher makes in terms of giving students responsibility and choice, and in some cases control of their learning experience. Having said this, there are instances when a chosen curriculum model is closely linked to an instructional model (e.g., teaching through questions and a Tactical Approach to Teaching Games or cooperative learning and Adventure Education) resulting in the teacher choosing to stay with a particular instructional model throughout a lesson, or even an entire unit when that instructional model produces the strongest learning gains for students.

When selecting an instructional model, we advise teachers to 1) select the content to be taught, 2) determine the outcomes to be achieved in a lesson and finally 3) select an instructional model that will enable learners to be successful in achieving the learning intent. It is critical to consider the type of learners, their abilities and interests and the context within which they participate in order to ensure that the selected instructional model is congruent with the developmental level of the learners.

Fortunately, all types of learning, including what Mosston referred to as reproductive (mirror and replicate) and productive (discover or create) are necessary for learners to achieve across the four learning domains; physical, social, cognitive and affective. Regardless of the curriculum model chosen to frame a unit of instruction, all activities and content can be taught using various types of instructional models. As noted by Doherty (2010), physical education teachers need to be skilled and knowledgeable at adjusting and revising learning tasks according to the needs and responses of their students.

Understanding the various instructional models and how to select an appropriate model for the learning outcomes identified allows the teacher to use the model most suited for a particular situation and group of learners. There has been some suggestion that the teacher-centered instructional models might be ineffective in maximizing student learning (Cothran and Kulinna, 2003). However, we argue that instructional models should not, and cannot, be compared in an attempt to determine which is best or better. If one instructional model is better than another, it is only better within a particular context and with a particular group of learners, and then only because it matches the needs and the context in a particularly effective way. For example, if the outcome of a lesson requires a student to learn a technical skill such as putting the shot, aiming and releasing the arrow in archery, or performing a back handspring in tumbling, modeling and subsequent replication could be necessary. This type of learning, and ultimate performance, might best be developed through a direct teacher-controlled instructional model in the early stages of learning. As learning progresses the student might improve skill most effectively through more learner-centered types of instructional models such as teaching the skills to a classmate using peer teaching. Whitehead and Zwozdiak-Myers (2007) suggest that how physical education is taught is as important as what is taught for achieving the aims of physical education and the intended learning outcomes for lessons.

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| Learning Experience 1  Observe a physical education class to reveal what occurs during the lesson by the teacher and by the learners. Arrive to the physical education class prior to its beginning and find an unobtrusive place to sit where you will not distract either the teacher or the students. Take anecdotal notes on what you observe.  Following the lesson, ask yourself these questions?   1. Did the lesson require students to replicate knowledge or create new knowledge? 2. Based on your response to question 1, was the teacher’s choice for students to replicate or create appropriate to the content being taught? 3. Did the teacher appear to have adequate knowledge of learners, their interests and needs? 4. Did the teacher adapt the lesson, and use various instructional models as a result of student responses? 5. Did all learners have the opportunity to learn and progress? 6. Who made the majority of decisions in the class? 7. If students made some lesson decisions, which did they make?   Would you describe the lesson you observed as teacher-mediated or student-mediated or a combination of both? Do you believe the choice of model was appropriate for the content and the needs of the learners? |

ACTIVE TEAHCING FRAMEWORK

We introduced the notion of the active teaching framework in Chapter 12. It must be recognized that active teaching is not a recipe that has to be followed exactly. Rather it is a framework for understanding the major skills that effective teachers show in their work. There is substantial room within this framework for the individual styles of teachers to develop. Nor does active teaching mean that there is only one way to design lessons or present content. As you will see, the active teaching framework is applicable across various content areas within all curriculum and instruction models and among varying contexts and learners. This framework is equally applicable to whole-group and small-group teaching and to curricular approaches as diverse as Cultural Studies and Health and Wellness.

Active teaching is related to what has been called direct instruction, explicit instruction, systematic teaching or effective teaching. The active teaching framework contains the skills and strategies that are suggested for instructional models that employ small-group instruction, cooperative learning and reciprocal teaching among others. What all of these approaches share is the development and maintenance of learning students. The active teaching framework provides an understanding of the skills and strategies that are most likely to develop learning students.

MATCHING INSTUCTIONAL MODEL TO CONTEXT

In this chapter, we will describe what a variety of instructional models might look like in practice with examples provided to show how each instructional model could be employed across multiple outcomes and content. We will frame these instructional models within the active teaching framework.

Education is most effective when teachers adapt instructional models to the contexts within which they teach. Instructional models should reflect sensitivity to a) personal skills and preferences of teachers, b) characteristics of the learners being taught, c) the nature of the content being taught, and d) the context within which teaching takes place. Some teachers feel more comfortable with some models than others. *Teacher personal preference* is a legitimate factor in the teacher’s choice of which model to adapt, especially when that preference derives from a professional belief in the validity of a model. Teachers no doubt tend to perform better when they work from a model that they believe to be effective, one with which they are comfortable. Nothing is worse for teachers than to feel they are being forced to adopt an instructional model they do not believe in and cannot employ adequately. We frequently see novice teachers using instructional models that allow them to keep control of most teacher functions as they strive to develop their confidence and skill working with young people in the classroom. Teachers’ beliefs about instructional models can change, and teachers can learn to utilize new models; often easily when they become convinced that a different model will better help their students achieve learning goals.

The choice of instructional model should be sensitive to the *characteristics of the learners*. Clearly, when learners have had substantial experience in an activity, you will approach the teaching of that activity differently than if the class were all beginners. Well-behaved students who are able to take responsibility for their own learning and behaviour give teachers more options for choice of model than do students who require more attention to behavioral and managerial issues. Children with disabilities, dependent on associated abilities, may require a direct model or warrant consideration when employing a peer teaching or cooperative learning model. Students for whom English is a second language may benefit from a model that is enhanced by teaching tools such as task cards, posters, or materials posted on the school website for reference. It is important to keep in mind that not all students learn in the same way and at the same time. Using different instructional models at different times and for different content will allow students to learn in the way that best meets their needs and will also allow all students to experience various models and come to find them challenging and engaging.

*Content* is also a factor. Gymnastics, climbing, disc activities, and dance might lend themselves to different instructional models. Teaching basic skills in any activity is a different issue than teaching higher level strategies to learners who already have mastered the basic skills. For example, fitness problem solving in a Health and Wellness unit is best preceded by acquisition of basic knowledge about fitness and basic techniques for measuring it. Thus, a teacher might change from a whole-class active teaching model for basic knowledge and skills to a group-oriented problem-solving model for higher order knowledge and skills, all within the same fitness lesson or unit.

The *context* for teaching is also important to the choice of model, particularly the facilities. If the facility for teaching tennis consists of six courts, all in one row, then the problems of gathering and dispersing students along the row of courts might compel a teacher to use a task or individualized model rather than a games-based model involving teaching through questions where students would need to come together more often. Safety issues in a beginning archery class taught outdoors might suggest active teaching with visible teacher control at the outset and, depending on the students, perhaps throughout the unit.

The effectiveness of any instructional model must be judged in terms of student process and outcomes. Do students achieve the goals of the unit? Are there large amounts of active learning time in the lessons? Do students grow in their appreciation of the activity and their desire to participate? Answers to these questions should determine whether the instructional model meets the needs of the context in which it is used.

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| Learning Experience 2  With a small group of your teaching peers, discuss the four considerations identified above for choosing an instructional model (personal choice, characteristics of learners, content being taught, and context). Base your discussion on your own beliefs, values and experiences.  Following this discussion, what do you know about the students you will teach that might influence your choice of models? Do you feel comfortable turning decisions over to students? Are you more comfortable maintaining control? Are you confident in your content knowledge across the many physical education strands which are taught in primary and post primary physical education? Are the facilities adequate to allow designing varying learning experiences for students? Does the community in which you will teach hold specific values that will impact your teaching decisions? |

TEACHER MEDIATED AND STUDENT MEDIATED INSTRUCTION

As we indicated in Chapter 12, how tasks are mediated in the teaching/learning process defines the categories of instructional models. Teacher mediated instruction can be delivered (i) directly through group-oriented active teaching models, (ii) indirectly through task or station teaching or (iii) indirectly through self-instructional models. There is a growing interest by teachers in student mediated instructional models such as (i) in peer or reciprocal models, (ii) small-group instruction, (iii) Sport Education teams, (iv) cooperative learning models, (v) problems-based learning or (vi) service learning.

There is no hierarchy of models; each is appropriate for a given context, the outcome and objectives of a lesson, what you want learners to achieve, the content to be introduced, the expectations you hold for learner behavior and growth, and your expertise. These issues will guide your selection of instructional model within either teacher or student mediated teaching. Regardless of the instructional model employed, guided and independent practice can play a role in your teaching practices to strengthen the learning of your students.

*Guided and Independent Practice*

When a new task has been introduced or when the conditions for task practice have been changed substantially, a period ofguided practice should occur after the new task has been communicated. *Guided practice* is a period of group practice that functions to (a) correct major errors in performance, (b) reteach if necessary, and (c) provide sufficient practice so students can participate in independent practice successfully.

In teacher-mediated instruction, guided practice is most effectively accomplished through teacher-led, whole-group practice. In student-mediated instruction, guided practice occurs similarly, except that students lead the practice. Guided practice usually occurs in a whole-group formation with the teacher in a position to see, and be seen by, the entire class. As students practice the task, the teacher provides prompts and cues to emphasize the major technical features of the task and the way the task is to be practiced. The organizational format allows the teacher to check to see if major errors are being made. If so, time is taken to reteach the skill or strategy, emphasizing the ele­ments related to the errors. Checks for student understanding are frequent, both by visually monitoring performance and by asking questions.

Teacher feedback during guided practice typically focuses on the technical aspects of performance, particularly the critical performance elements emphasized during the task communication. Feedback relative to these critical elements should be specific, and be balanced between correcting errors and reinforcing appropriate performance (see Chapter 14 for an explanation of various forms of feedback and for correctives related to student errors). You should also ensure that the conditions for student practice are being followed, that is, student practice is congruent with the task description. For example, if the practice task requires a "feeder" (i.e., a player delivering the throw or pass sets to a partner to practice spiking), the type of feed should be monitored also, with supportive or corrective feedback provided for students feeding correctly and incorrectly.

Response rates during guided practice should be as high as possible, and there should be enough practice trials for you to feel confident that students can be successful when shifted to independent practice. If initial student responses during guided practice result in too many errors, then you should either reteach, emphasizing the elements being performed incorrectly, or shift practice to an *easier* task that will act as a building block for the current task. Once you are sure that tasks can be performed successfully as intended, then, students can be shifted to independent practice.

The purpose of *independent practice* is for students to integrate the new task into previously learned material and to practice the task so that it becomes automatic. Students need sufficient practice so they can use the skills confi­dently and quickly in conditions under which the skill or strategy will eventu­ally be used. Time is a precious commodity in physical education, and many teachers feel that they have to cover a large number of activities. Subsequently, teachers often do not allow enough time for students to practice tasks to the point where they can do them successfully and automatically. The result is that students have covered many skills, strategies, and activities, but can't do any of them well enough to enjoy the context in which they are used. Students need to have sufficient command of skills and strategies to utilize them effectively in game and other movement settings. Students need to know dance steps and transitions well enough to do the dances to music without prompts. They also need to be strong and fit enough to perform sustained strength or aerobic activities.

In summary then, guided practice is used to correct major errors and ensure that students can profit from extended practice; independent practice is used to achieve high rates of successful repetitions of the task. The teaching role (teacher or student) during independent practice is very different than during guided practice. Typically, students are dispersed for independent practice, using all the space and equipment available. The major instructional function during independent practice is *active supervision* (introduced in Chapter 12)*.* The major purposes of active supervision are to (a) keep students on the assigned task and (b) provide supportive and corrective feedback where necessary.

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| Learning Experience 3  Design a learning task for both a teacher-mediated and a student-mediated lesson. Develop a description of what guided practice would look like for each learning task and what independent practice would look like. This requires you to consider the teacher and students’ roles in both types of practice. Refer back to the purpose of each type of practice to inform your decisions. |

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| Box #. Key features and elements of active supervision, whether, mediated by teachers or students   * *Keep all students within sight.* Moving around the perimeter of a space is usually better than moving through a space, especially at the outset when you are trying to establish a strong on-task focus. * *Scan frequently*. Don't get caught up for too long with any student or group. Briefly scan the entire class frequently. * *Don't get predictable.* Moving down a line of tennis courts or clockwise around a gymnasium gets predictable. Some students, when they can predict you are far away, will be more likely to go off task. * *Use your voice across space.* It is important that students know that you are aware of their behavior even though you are not near them. Quick prompts and feedback across space help to accomplish this goal. Try to balance the supportive and corrective comments; that is, don't respond only to the off-task students all the time. * *Be awareof unsafe or disruptive behavior and stop it immediately.* * *Try to distribute your attention equitably.* Make sure that time and interactions are not predictable on the basis of gender, race, or skill level. * *Use opportunities to build expectations for a successful learning-oriented climate.* |

TEACHER MEDIATED INSTRUCTIONAL MODELS

Teachers in an instructional setting generally work with groups of learners. Learning should occur for each member of the group. When designing group instruction, the teacher must decide how to meet the needs of all individuals to facilitate learning: (i) design similar experiences for all learners, (ii) provide all learn­ers with appropriate explanations and demonstrations when needed, (iii) effectively intervene with each learner as appropriate, and (iv) optimize opportuni­ties to respond to all learners.

*Direct Instruction*

The dominant model used in most physical education programs internationally, especially for children and beginners at any level, is direct instruction. Terms used to describe this instructional model include *direct instruction* (Rosenshine, 1979), *interactive teaching* (Rink, 1985), and *explicit instruction* (Rosenshine & Stevens, 1986). Direct instruction also provides the main components for instructional theory into practice, popularly known as the Hunter model (Housner, 1990).

In this model, teachers provide direct instruction, either to a whole class or small groups, followed by guided practice in which major errors are corrected, followed by independent practice in which student work is actively supervised. This all takes place within a supportive climate in which high, realistic expectations are set for student work and students are held accountable for performance. In direct instruction, content is communicated by the teacher, rather than through curric­ular materials. The pacing of the lesson is brisk and teacher controlled. Stu­dents get many learning opportunities and experience high success rates. Direct instruction teachers are skilled managers, relying on managerial routines to opti­mize time for learning and reduce opportunities for off-task and disruptive behavior.

Direct instruction has been shown to be differentially more effective than other instructional models for well-structured subjects, such as reading, math­ematics, and physical education. Part of the success of direct instruction can be attributed to the organizational and supervision aspects of the model that allow teachers to manage student engagement.

In direct instruction, the teacher chooses the content, breaks it down into parts and arranges the pro­gressions, which are typically sequenced in small steps. Lessons are delivered through clear demonstrations and explanations of both the content and the task to be achieved. Students are held accountable for participation and achievement of tasks. Feedback and evalu­ation are done by the teacher, with active supervision as the necessary intermediate function (see Chapter 6).

Box # provides a glimpse of an orienteering lesson where the teacher uses direct instruction to assist students in learning to use a compass.

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| Box #. Reading a compass using Direct Instruction  **Lesson Outcome**: For students to navigate a compass walk  **Guided Practice:**   * + - * 1. Student each have a compass and is standing a foot from one another facing the teacher         2. Teacher has a compass and large poster of the face of the compass         3. Teacher asks students to set their compass for 155 degrees and face the direction of travel         4. After observing the students, the teacher reteaches/reviews how to set the bearing and how to determine the direction of travel         5. Teacher again asks students to set their compass, this time for 60 degrees and face the direction of travel         6. After observing the students, the teacher confirms and provides feedback on the task         7. Students are ready to move into independent practice   **Independent Practice:** Compass walk  Each student is given a task card with the following directions on it.  Place a coin/marker on the ground between your feet, set your compass for an arbitrary direction between 0 and 120 degrees (for example, 40 degrees). Face the chosen bearing as directed by the compass and walk this bearing for 20 steps--STOP.  Look at the compass again, add 120 degrees to the original bearing (for example, 40 plus 120 = 160). Set this new bearing on the compass. Face this new bearing as directed by the compass, walk this new bearing for 20 steps, and STOP.  Again, add 120 degrees to the last setting (for example, 160 plus 120 = 280). Reset the compass, determine the new direction to walk, and take 20 steps in the direction indicated by the travel arrow--STOP.  The coin/marker should be right between your feet if you have used the compass properly and walked exactly. If you did not succeed, try it again with another bearing between 0 and 120 degrees at the start and add 120 degrees at each of the two turns, walking the same distance in each direction. You will succeed in finding your starting point. |

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| Learning Experience 4  Select a learning outcome for a content area that you believe would be most appropriately taught using direct instruction. Similar to Box # above, design a set of learning progressions which you would use to provide practice for students. |

Task teaching

Teachers often find it useful to have students practicing more than one task at the same time. This is typically accomplished through one of three task-teaching instructional models (task, station and inclusion). *Task teaching* refers to organizing the learning environ­ment so that different students can engage in different learning tasks at the same time. Task teaching has also been referred to as *station teaching* (Mohnsen, 1995; Rink, 1998), although we would argue that station teaching is a subcategory of task teaching because there are ways of doing task teaching without stations. The availability of a climbing wall to accommodate an entire class is an example of task teaching that might prompt a teacher to design a set of related tasks for students to rotate between (see the example in Box #).

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| BOX # Station Teaching in a Climbing Unit  Students are initially introduced to and have the opportunity to practice a set of climbing-related activities. Following this introduction and practice, these activi­ties become stand-alone stations set up around the teaching area. Each day throughout the 4-week climbing unit, students rotate between the six stations.  cargo net  zip line  climbing wall  horizontal wall  soft or mohawk walk  electric fence  Task cards pictorially demonstrate each task and prompt spotting and safety. At the close of each lesson, a debriefing is conducted focused on various aspects of student participation: group support, spotting, fear, conflict resolution, leader­ship, or enjoyment. |

While task teaching does allow for station teaching that reduces the need for all students to access the same equipment at the same time, task teaching is not confined to situations in which limited equipment is the dominant contextual factor’. Consider the possibilities for teaching strength development or a golf unit. In strength development, several major muscle groups must be worked on regularly. In golf, several different strokes fundamental to the game must be practiced regularly. Both of these could be accomplished with the teacher pacing stu­dents through the series of strength and skill tasks, all students doing the same task at the same time. Both could also be accomplished through a model in which various strength and stroke task stations are spread throughout the learning space and students rotate among the task stations during the lesson.

In task teaching, it is usually inefficient for a teacher to communicate the content of each task to students. Teachers sometimes try to describe and demonstrate each task at the outset of a lesson. This strategy, to be effec­tive, requires that tasks be simple and easily remembered. Introducing new tasks is difficult in a task format. Sometimes teachers use active teaching to introduce tasks in the early lessons of a unit and use task teaching to practice these tasks as the unit progresses. Students then know the tasks and can prac­tice them without lengthy teacher explanations and demonstrations.

Most teachers who use task formats design task cards for students or task posters for each station. These communicate the task through brief, simple descriptions. Task posters can also use pictures or drawings. The student reads the task description, perhaps looks at the picture of correct technique, and begins to practice the task. This approach lends itself to either simple tasks or ones with which students are familiar. Figure # shows a sample task card and figure # a more complex task card with diagrams and pictures to aid the students.

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| SPRINT STARTS   1. Split your foursome into two groups of two 2. One group has a timer and starter/recorder 3. The second group has two runners 4. Time only the two full effort tasks 5. Groups switch roles after the running group has finished each task giving time to rest before the next running task.   Task 1. Three starts plus 15 meters at a shuffle  Task 2. Three starts plus 30 meters at a stride  Task 3. Three starts plus 60 yards at full effort  Task 4. Three starts plus 15 yards at full effort |

Figure #: Task card for sprint starts

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Figure #. Task Card for Three-ball Cascade Juggling (adapted from ……….)

One advantage of task teaching is the possibility of accommodating different skill levels at one station. A major problem in teaching large groups of students is that they often have marked differences in ability and experi­ence with the activity. In direct instruction, the teacher typically communicates one task and students respond. Occasionally, very effective teachers find ways to communicate variations in the task that accommodate different skill levels. For example, students could be given the option of serving from the end line or center linein volleyball, depending upon their skill level. Sta­tions, however, are perhaps a more effective way of providing for varying skill levels.

Designing tasks that have multiple levels of performance and allow stu­dents choices in selecting their entry levels characterizes a special case of task teaching called *inclusion teaching.* Within a given task, there might be options (e.g., on skill progressions, physical performance criteria, choice of various implements, size of targets, or number of required repetitions), and students would select how and where to begin the task, depending upon their skill level. In hurdling, for example, stations might be set up sequentially, moving students from hurdling a low number of hurdles at a low height to increasing the height over an increased number of hurdles. Tasks could be communicated through task cards or self-instructional materials.

Another advantage of the task teaching is that teachers can set up their physical space ahead of time in ways that help learners master content. In badminton, for example, a teacher might want specialized learning aids, to help students acquire specific skills. In a direct instruction lesson, these aids would have to be set up and taken down as the tasks changed throughout the lesson. With a task model, they can be set up for the entire lesson, with students rotating through the task stations. One station might be for the short and long serve, with a string stretched above the net to provide feedback for the short serve to increase task difficulty and target areas marked towards the back of the court floor for the long serve. Another station might have similar aids for the clear and drop shots. These stations could be used for individual student practice or set up to allow team practice in three versus three game conditions. A final station might be a computer with an interactive badminton CD to provide students practice at shot selection based on the tactical problem posed. The same activity could be completed on prepared task sheets that denote badminton-specific game play scenarios.

Task progressions between stations are more difficult and represent a general weakness in this instructional model. The problem is that, with six stations and five students per station, all stations have to be used at the outset, with students rotating throughout the lesson. If stations 1 through 6 represent a progression, then some students will be starting at the last stage of the progression and moving to the earlier stations as they rotate. Thus, station teaching is typically used for tasks that do not represent progressions. However, there are instances where three stations can be set up (one on each court) that allows students to choose where they start with a particular activity (e.g., court A, layup without any approach, B with an approach and carry and C with a defender). The problem in this case would be the number of students who all choose a particular station.

Most teachers who use one of the task models signal changes in stations / tasks and have students rotate on a signal, or a set time period. It is possible, however, to have students rotate after having met some particular performance criteria, whether it be volume of practice (25 trials) or quality of practice (five consecutive hits above the line). The problem with criterion-based rotation is that several stations tend to get crowded, with resulting problems of equipment sharing and active involvement.

To use the task models well, students need to have good self-control skills. Teachers can actively supervise task environment just as they would independent practice of any kind. They can provide more feedback and teaching, however, if students are generally well behaved and on task. The task models work best when tasks are clearly described (a situation for performance, the performance itself, and qualitative or quantitative indicators of success or completion) and when there is a strong accountability system other than teacher supervision, such as accumulating points toward individual awards or competition among the rotating groups based on collective scoring.

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| Learning Experience 5  Select a content area (e.g., tennis, gymnastics, flag rugby). Design three different learning outcomes for that same content area and one aspect of a lesson that would employ task, station and inclusion teaching for each learning outcome. Demonstrate your understanding of the difference between these three task teaching models in your description of how the lesson would unfold. |

Teaching through questions

Wiggins (1989) suggested that “the aim of curriculum is to awaken, not ‘stock’ or ‘train’ the mind” (p. 45), arguing that students need to view questions as a means to go beyond current knowledge to discovery, as a way to deepen meaning, and as a source for stimulating more thoughtful inquiry for which answers must be sought. Teaching through questions challenges students to be thoughtful, engages them in cognitive processing and/or encourages them to explore alternatives. In other words, teaching through questions stimulates the learner to formulate a response to a query or problem rather than merely replicate an example. As Boorstin (1985) said, “take nobody’s word for it; see for yourself”.

Teaching through questions refers to an instructional model in which tasks are communicated to students through questions that a) pose problems that guide student activity toward particular goals or b) questions that pose problems to be solved or interpreted. In physical education, this approach has been widely used in teaching young children, especially when the focus has been on movement and movement concepts. Teaching through questions when teaching movement to children is really a variation of direct instruction because a whole-group format is typically used and the teacher tends to control the pacing of the lesson by presenting a sequence of tasks through questions. The questions most often represent refining and extending tasks (Chapter 12), and ones that allow students to explore options rather than reproduce a skill as shown by the teacher.

The distinguishing characteristic of this model is the way in which the task is presented to students and how that changes the student's role in the learning process. In direct instruction, tasks are described carefully, including the condi­tions for practice, the task itself, and some measure of success. In teaching through questions, a common strategy is to describe conditions for practice and some measure for success, but to leave the performance itself open for stu­dent exploration and interpretation. For example, a teacher says, "Maintain­ing self-space, can you find a different way to balance on three body parts?" Balancing on three body parts indicates the successful completion of the task, but there are several ways students can be successful (e.g., two feet and one hand). The nature of the task presentation encourages students to explore different combinations. One solution might be followed by the question, "Can you find another way to do it?" In this case, the decision of what to do to fulfill the task is left to the student, who does not try to reproduce what the teacher has explained and shown as the right way to do a task.

*Guided Discovery – Convergent Inquiry*

When teachers prepare a series of task questions that help students progress toward a specific goal with one correct response, the model represents what Mosston described as *guided discovery (*Mosston & Ashworth, 1994). Guided discovery involves convergent thinking where the student is led or directed to the correct answer through well designed questions. Figure # provides an example of convergent inquiry for landing following a vault over a horse.

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| Guided Discovery - Convergent Inquiry  Goal: Students to recognize what is needed to ‘stick’ a landing in gymnastics.  Teacher designed questions might include:   * As you and your partner practice the vault, what might prevent you from stepping forward on the landing? * What happens when you lower your center of gravity by bending your knees? * Does it make a difference when you keep your upper body upright and eyes focused on the wall in front of you? * Which part of the foot is most stable on the landing? |

Figure #. Questions to guide sticking a landing

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| Learning Experience 6  Select a content area. Determine a learning outcome toward which students will strive to achieve with the teacher employing guided discover. Design a set of convergent questions, or tasks that might be used to move students toward the outcome desired. |

*Problem Solving – Divergent Inquiry*

Both guided discover (convergent) and problem solving (divergent) may be employed in connec­tion with most instructional models to add a problem-solving component to the learning environment. When teaching through questions is used in con­nection with other teaching models, the result is most often referred to as a *problem-solving approach.* In Chapter 12, we saw how teachers can use ques­tioning to get students to solve problems and think critically and tactically through the Tactical Approach to Teaching Games. When content to be learned is intended to place the learner at the center, draw out their individual creativity, involve discussion among peers and stimulate abstract thinking, then problem-solving / divergent inquiry are appropriate.

Most activity units could be taught using the teaching through questions models. Box # shows questions and examples from a basketball unit. Keep in mind that teaching through questions is often intended to achieve cognitive goals that are often at least as important as motor skill or strategy goals. Figure # shows this approach for part of a unit introducing cardiovascular endurance.

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| BOX # Types and Examples of Questions for Basketball  Questions can be organized into four types according to the cognitive activity involved, Questions from each category are used for different purposes. To use questions as part of an instructional model, make sure they are consistent with the purposes for which they are used.  1. *Recall questions.* These require a memory-level answer. Most questions that can be answered yes or no are in this category.   * Where should your eyes be when you are dribbling? * Which hand should be up on defense against a right-hand dribbler? * Which foot should you push off from when cutting? * Should you keep your elbow out while shooting?   *2. Convergent questions.* These aid analysis and integration of previously learned material, require reasoning and problem solving, and typically have a range of correct and incorrect answers.   * Why should you stay between your opponent and the basket? * What are your responsibilities if your opponent shoots and moves to the right to rebound? * What should you do if the defender steps out to guard you on a pick and roll?   3. *Divergent questions.* These require solutions to new situations through problem solving. Many answers may be correct.   * What ways could you start a fast break off a steal? What could you do if caught defending a taller player in the post? * What passing options do you have when double teamed? * What strategies would you suggest when three points ahead with two minutes left in a game?   4. *Value questions.* These require expressions of choice*,* attitude, and opinion. Answers are not judged as correct or incorrect*.*   * How do you react when you are fouled but the referee doesn't call it? * How do you feel about intentionally fouling opponents at the end of a game? * What gives you more enjoyment, scoring a lot or playing on a winning team? |

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| Discovering Cardiovascular Fitness  Students come into class and lie on the floor while the teacher explains the expectations of the day’s lesson. “Today’s lesson will involve a series of individual and partner tasks that can be performed on the field, track or tarmac surface. As you perform each task you will make a decision on which activities are most suitable for developing your cardiovascular endurance.   * We will first take your resting heart rate and record it on the score sheet. * After you complete each task, take your pulse and record your heart rate on the score sheet by each activity. * Between activities, rest until your heart rate is back to resting.   Task 1: Walk for one minute  Task 2: Jog for one minute  Task 3: Skip rope for one minute  Task 4: Walk for one minute, jog for one minute  Task 5: Jog the corners of the running track and sprint the straight for two laps  Task 5: With a partner, play catch with a disc for one minute  Task 7: How many times can you pass the disc in one minute?  Task 8: Play a game of 1 versus 1 basketball for two minutes  Let’s analyse our data and talk about what we learned from this experience.   * What happens to your heart rate as you change activities? * Which increases your heart rate more, the activity or the increasing time spent on an activity? * Are you able to talk while completing some activities more than others? * How did your heart rates differ from peers? * What do you think you need to do to increase your cardiovascular endurance? |

Figure #. Introducing Cardiovascular Fitness through Discovery

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| Learning Experience 7  Select a content area. Determine a learning outcome toward which students will strive to achieve with the teacher employing problem solving. Design a set of divergent questions, or tasks that might be used to move students toward the outcome desired. In designing questions, use recall, convergent, divergent and value questions. | Learning Experience |

*Games-based instruction*

In Chapter 9 we shared the Tactical Games Approach to Teaching Games as both a curriculum and an instructional model. As noted previously, games constitute a huge portion of most physical education and physical activity programs for young people yet often games are not taught in realistic and challenging ways where young people learn ‘what to do’ and ‘when to do it’ at the same time they are learning ‘how to do it’. Whether using a Tactical Games Approach or Teaching Games for Understanding, games teaching encorporates teaching through questions to encourage students to think critically about tactical problems, appropriate skills and when to use them. In games teaching, questions are developed based on what you want students to achieve; ‘what’, ‘how’, ‘when’ and ‘where’ questions are explored (Mitchell, Oslin&Griifin, 2003). We encourage you to return to Chapters 9 and 12 and review the key aspects of the Tactical Games approach from the perspective of designing instruction.

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| Learning Experience 8  Based on your review of the Tactical Games curriculum and instruction model in Chapter 9, and instructional aspects related to this model in Chapter 12, select content for a particular game and identify  *Tactical problem*  *Lesson Focus*  *Objectives*  Then, design the following components of a lesson to achieve the above objectives.  Game: conditions / goal / questions  Practice task: goals / cues / extension  Game: conditions / goal  Closure |

PREREQUISITES FOR EFFECTIVE STUDENT-MEDIATED INSTRUCTION

Instructional models that rely on student mediated instruction are becoming increasingly popular with teachers, and for good reason. Advocates of student mediated instruction claim that it is effec­tive because it results in the following (Cohen, 1994b):

* More, active engaged, task-oriented behavior than individual work
* More feedback to struggling students
* More opportunities for purposeful practice for students of all skill levels
* Better pro-social behavior development among students
* Strong within-group forces that help students avoid drifting off task
* Better motivation and allegiance to the class because of increased peer interactions
* Equal-status interaction among students

If all these were present, both content and social outcomes would be positively affected through school physical education.

Effective use of the student mediated instructional models requires that teachers prepare students to be able to take part in them effectively. This is especially true if the students' previous school experiences have been primarily in teacher mediated, whole-group instructional models. The younger the stu­dents, or the less experience they have had working in pairs or groups, the more important is an effective preparation program as a prerequisite for participa­tion in student mediated instruction.

The goals of a preparation program are twofold: (a) to develop the specific skills students will need to participate effectively in student mediated instruc­tion and (b) to establish special behavioral norms for working in pairs and groups. The teacher should make it clear to students why student mediated instruction is important and what they might expect to gain from participating in it. The specific skills needed to participate typically include the following (Cohen, 1994a; Houston-Wilson, Lieberman, Horton, &Lasser, 1997):

* Student capacity to be aware of different ability and interest levels of their peers
* Communication techniques such as listening skills and providing clear explanations
* Teaching skills such as prompting, showing, observing performance, and giving feedback
* Reinforcement techniques (see Chapter 14)
* Ability to see critical performance elements and common errors in the skills practiced

The behaviors necessary for effective participation in student mediated instruction group around three important norms: (a) Everyone should con­tribute, (b) No one should dominate, and (c) All should be sensitive to student sta­tus within the group. The contribution of dominance-avoidance norms are typically achieved by helping students be willing to express their ideas, listen to others so all have a chance, ask others for their ideas, and discuss and give reasons for their ideas. It is also helpful if some means for conflict resolution is taught to students as the appropriate strategy for resolving the differences and disputes that inevitably arise in these instructional models. Students must rec­ognize all the status issues that can marginalize them in physical education (e.g., gender, skilfulness, race, body type, height and weight). The norm of "all getting a fair chance" cannot be achieved without students being fully aware that these status issues often work to the detriment of some of them.

These behavioral norms are identical to those teachers establish as they move from compliance to cooperation to community (Chapter 5 and 6), regardless of what instructional model is utilized. Cohen (1994a) states that the skills and behavioral norms needed to participate effectively in student mediated instruction cannot be learned simply through reading about them or listening to someone explain them. She suggests that students best learn these skills and norms through participating in skill builders—games and practice activities designed to allow students to learn to work together. Many of these types of practice activities could be developed through several teacher mediated (e.g., task teaching, teaching through questions) and student mediated (e.g., cooperative learning, problem-based learning) models when employed within numerous curriculum models (e.g., Adventure Education, Sport Education, Teaching Personal and Social Responsibility).

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| Learning Experience 9  How would you prepare your students for self-mediated instruction? Refer back to box # - Three Ball Cascade Juggling in this chapter. We are going to extend this task to a student-mediated lesson where students must gain peer approval for skill performance on a task before moving on to the next task. Describe what you must teach the students in order to successfully serve as a peer tutor in this case and how you might achieve that. |

STUDENT MEDIATED INSTRUCTIONAL MODELS

In Chapter 12 we introduced the notion of student mediated instruction, in which students fulfill many of the teaching functions performed by teachers in teacher mediated models. We have now explained the prerequisite skills and behavioral norms that teachers have to establish among students in order for student mediated instruction to be fully effective. The question is how effective student mediated instruction is when it is done appropriately. The answer is clear: Students can teach and learn from each other effectively, and they enjoy it (Cohen, 1994b; Dyson & Ashworth, 2012; Mosston & Ashworth, 2007; Markley & Goc-Karp, 1997). There is also evidence that important social skill benefits are achieved through use of these formats (Dyson & Harper, 1997; Strachan & MacCauley, 1997; Sutherland, 2012).

Peer Tutoring / Reciprocal Teaching

As learning groups get smaller, achievement increases (Bloom, 1984), with the most dramatic achievement gains resulting from tutoring. Instructional models that utilize pairs or triads of students as the basic instructional unit are typically referred to as *peer tutoring, peer teaching* or *reciprocal teaching.* These models are particularly useful for achieving the goals of guided practice, which is fundamentally important to putting students in a situation in which they can benefit from independent practice. They are also useful for creating conditions in which students can utilize higher-order thinking skills to solve problems.

In relation to teaching students with disabilities, peer tutoring is typically of two types. One is when higher-skilled students tutor lower-skilled students for the primary purpose of boosting the performance of the latter. This model might prove useful in certain limited situations for short periods of time, but it does not represent a sufficiently general model for use in day-to-day teaching. The more useful, general model is referred to as class-wide peer tutoring (CWPT), in which all students serve as both tutors and tutees (Houston-Wilson, Lieberman, Horton, &Kasser, 1997). CWPT has a long history in physical education, where it is more com­monly referred to as reciprocal teaching (RT) (Mosston, 1966; Mosston Ashworth, 1986, 1994, 2007).

CWPT or RT is typically highly structured, using teacher-developed mate­rials to guide the progress of the tutorials. Tutors benefit from having to teach skills, knowledge, and tactics to classmates. Tutees benefit from individualized attention and feedback. The tutorial pair can progress at a pace conducive to the mastery of content. The key to successful CWPT-RT is the quality of the instructional materials, evaluation, feedback, and encouragement provided by the tutor. An additional benefit to CWPT-RT is that students acquire impor­tant interactive skills and also gain knowledge about the learning process through their responsible roles in it.

There is no strong evidence suggesting how student pairs should be formed. Contrary to conventional wisdom, there is evidence that higher-skilled students benefit from peer tutoring as much as lesser-skilled students; thus, mixed-ability pairs might be most useful. What is clear is that tasks assigned to students should be well structured, unambiguous, and challenging. When students are in pairs, or triads for certain activities, their roles should be clearly defined and understood. When students are tutors, they are teachers. When students are tutees, they are learners. For this model to work, the tutors must be able to evaluate and control their partner's work. Tutors have to have the skills to teach, and students must work cooperatively. When student pairs stay together over extended periods, they can develop a cooperative working relationship of mutual respect. When pair combinations are rearranged within a class, students get new opportunities to learn and teach with other classmates. Thus, there are benefits both to sustaining pairs and switching pairs, and some combination of each is likely to provide the best long-term benefit.

CWPT-RT requires that teachers spend time preparing appropriate well-struc­tured materials that include:

1. Breakdown of task and specific steps
2. Clear description of task and specific steps
3. Critical points to guide tutor observation
4. Graphics (drawings, sketches, pictures) of task
5. Feedback cues and prompts of appropriate performance

Figure # shows a reciprocal task sheet for use with pairs teaching one another the Macarena. Figure # shows a shot putt task sheet for use with triads. Once students have been taught to per­form the instructional functions and the necessary managerial routines have been established, the teacher's role during the lesson is to supervise the tutor­ing process, providing feedback and encouragement to both tutors and tutees. In RT, students work in pairs with one as tutor (teach, observe, provide feedback) and one as tutee (performer) continuing until the task is completed or a signal to switch roles is given by the teacher. Pangrazi (1996) suggest the fol­lowing "pairing principles":

* For effective outcomes (communication skills, cooperation, etc.), allow students to choose partners they regard as supportive
* When feedback and coaching are important, pair students of higher and lower ability
* For maximum interaction (problem solving or game strategy) pair stu­dents who are compatible in terms of ability
* For cognitive and affective tasks, gender and ability are not relevant, so pair students based on other factors
* For tasks that involve pairs against one another, partners should be of similar size, strength, and ability

Always pair students in ways that do not leave marginalized students to the final pairing; indeed, pairing should be done in ways that advance the community nature of the learning environment and contribute to the goals of anti-bias teaching *(*see Chapter 5).

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| Teaching the Macarena   * Teacher plays the Macarena music to set the stage * Teacher demonstrates the Macarena to the music * Teacher teaches step 1, and has students practice it several times * Teacher teaches step 2, has students practice it several times and then adds it to step 1 * Students practice steps 1 and 2 together several times * Teacher teaches step 3, has students practice it several times and then adds to steps 1 and 2 * Students practice steps 1, 2 and 3 together several times * Teacher teaches step 4, has students practice it several times and then adds it to steps 1, 2 and 3 * Students practice steps 1, 2, 3 and 4 several times * Students try these steps to the music   At this point, the teacher turns the responsibility over to teaching peers to provide feedback and guidance on these first 4 steps. They then move on to teaching the final steps (5-8) to their peers. Using the task card below, and working in pairs, students take turns observing and assisting in steps 1-4 and then proceed in tutoring one another on steps 5-8 of the Macarena ensuring that everyone masters the steps. The task card below will assist the students in tutoring and being tutored. When all students have tutored and been tutored, the entire class will dance the Macarena to music.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Macarena steps | Trial 1 | Trial 2 | Trial 3 | Trial 4 | Trial 5 | | 1. Dancer stretches arms forward, palm down, right arm, then left arm |  |  |  |  |  | | 1. Dancer turns arms over so palms are up, right, then left |  |  |  |  |  | | 1. Dancer puts hands on own shoulders, first right hand on left shoulder, then left on right |  |  |  |  |  | | 1. Dancer puts hands on the back of head, again right, then left |  |  |  |  |  | | 1. Dancer places arms on hips, right hand on left hip, then left on right |  |  |  |  |  | | 1. Dancer's hands go on their respective hips or rear end, right then left |  |  |  |  |  | | 1. Routine finishes with a pelvic rotation in time with the line "Ehhhh Macarena!" |  |  |  |  |  | | 1. Dancer simultaneously jumps and turns 900 counter clockwise and repeats the same motions throughout the entire song |  |  |  |  |  | |

Figure #. Pairs task card for teaching the Macarena

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| Work in groups of three — doer retriever and observer    Doer executes the putt 10 times from the circle toward the retriever using a soft ball  Retriever returns the ball by rolling it back to the doer  Observer offers feedback to the doer by comparing the performance to the criteria and graphic provided below  A standing putt   * Standing facing the direction of the putt * Grip the shot (ball) with pads of fingers (not resting it in the palm) * Position the shot (ball) in the soft spot on the neck under the ear of putting arm * Putting elbow is held high * As putting the shot (ball), lead with hand not elbow * Punch with the putting arm and finish with a flick of the wrist toward the target area * Bend and drive through the legs   ADD GRAPHIC OF HAND POSITION AND PUTT |

Figure # shows a shot putt task sheet for use with triads.

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| Learning Experience 10  Select a content area and a learning outcome for a lesson that requires students to teach one another using reciprocal teaching while in a duo or triad. Design a task card to guide peer interaction in this reciprocal lesson. |

Small Group Instruction

Educators are always on the lookout for instructional models that improve achievement while having important social benefits for students. Small-group teaching models, including cooper­ative learning, seem to provide those benefits. We use the descriptor *small groups* as the overall label for a variety of models, of which cooperative learn­ing is one. The intent of small group instruction is for students to work in small enough groups that will allow all students to work on and achieve a clearly defined task carried out without the direct and immediate supervision of the teacher. Group work, as an instructional model, is not the same as ability grouping, nor is it a strategy for teachers to gather special groups of students for short-term intensive instruction. Group work is a fundamental way to organize students for everyday instructional purposes.

There are two key features of small-group work (Cohen, 1994a). The first is that the teacher delegates authority to the group to fashion the nature of its work to accomplish the task the teacher has assigned. The learning process is still controlled by the teacher because he or she evaluates the group's final product, but the manner in which students fulfill the task is a function of the dynamics within each group. Because of this feature, the teaching functions within the group arelargely guided by group decisions and mediated by the students themselves. The fact that the teacher evaluates the final product is the key to the accountability mechanism of group work.

The second feature is that members need each other to complete the task; that is, they can't complete the task by themselves. Group members have to interact to decide how the task assigned by the teacher will be accomplished and who will do what. This requires substantial communication within the group and is the reason communication skills should be pre-trained before extensive use of this model. Students will have to listen, ask questions, criti­cize, disagree, and make collaborative decisions. This process enhances both their thinking and their collaborative skills. Cohen (1994a) suggests that groups of five are optimal for interactive and participatory purposes.

Group work requires interdependence of various sorts. ‘Goal interdependence’ exists when individuals can achieve their goals only when other group members achieve theirs. ‘Resource interdependence’ exists when individuals can achieve their goals only when other group members provide needed resources. ‘Reward interdependence’ exists when rewards to the group are based on contributions of each individual group member. Individual accountability is also important, so that group recognition and rewards are clearly attributable to the cumulative contributions of each group member. The notion of a group reward to which contributions of each member are absolutely clear is especially important for instructional tasks that involve collective and collaborative individual work. When the instructional task is a challenging and interesting group task that requires all group members to contribute to the outcome, the need for individual accountability tracking by the teacher is reduced because the accountability to keep students involved and working hard is embedded within the task itself.

Group work can be powerful in learning for several reasons. The student-to-student interaction within groups requires that all members pay attention and respond. Students also tend to care about the evaluations of their classmates, so they tend to be more task oriented. Members seem not to want to let the group down by not carrying their fair share of the load. Working toward the group goal encourages members to help one another, providing assistance when something isn’t understood, resources are needed or technical help with skill or tactics is appropriate.

Groups do not just coalesce and function smoothly on their own. The pre-preparation for associated skills and behaviour norms, suggested in Chapter 12, is necessary. It is also helpful if group members have specific roles designed to help the group function more effectively. Once roles are determined, they require preparation and training with modeling, feedback and clear criteria for how the job is done well.

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| Learning Experience 11  As noted above, group work does not always progress smoothly. Often we see young people whose voices are not heard and who are made to feel less valuable than their peers. Status has been identified as a huge issue that impacts young people and their interactions with peers. As a teacher, how might you address this issue with your students prior to involving them in small group work? Design a set of learning experiences that might serve to prepare young people for involvement in group work in such a way that all are included and valued. |

*Cooperative Learning*

Cooperative learning is a special variation of small group work. It has developed as a much utilized model both in general education classrooms and physical education. The use of cooperative games (in which outcomes are determined by team members to achieve a goal) is common in primary school physical education. However, cooperative learning really refers to an instructional model, rather that the activity being pursued (Kagan, 1990).

Cooperative learning is treated here as a special variation because of the specific cooperative learning structures that have been developed and widely tested in schools. Cooperative learning uses questioning to get students to solve problems and think “outside the box”; negotiating, re-negotiating, building on ideas, compromising, adapting, and evaluating are among the higher order thinking skills required. Students are expected to turn obstacles into opportunities while creating solutions.

Those we have chosen to describe include pairs-check, jigsaw, think-pair-share and problem-based learning.

1. In *pairs-check*, students work together in groups of four with two-partner pairs in each group. Student pairs work on an instructional task with one coaching the other, as in peer tutoring / RT. The two pairs then get together to check to see if they are achieving the same goal, solution, or outcome, with further feedback as a result.

Applied to a lesson.

*The class is working on developing a street dance to perform at a parent meeting. Each group of four students is assigned a street dance step. Each pair within the foursome works on learning the dance step. When they feel ready they get together with their foursome to learn from, provide feedback to and develop the dance step further.*

1. In *jigsaw,* a learning task is designed that can be divided in 4-6 required components. Every member of the class is assigned/chooses a component in which they would like to work. Groups are formed for each component and members work as a cooperative group to investigate all aspects of that component becoming an expert in it. After all members become an expert in their component, groups are rearranged so that an expert from each component is now grouped with other component experts, and each shares his or her learning so that eventually all group members know the content.

Applied to a lesson.

*Each foursome from the pairs-check portion of the lesson now work cooperatively to master their assigned dance step. Each member will become an expert in their dance step and be able to teach it to others successfully. One member of each foursome is now matched with three other students, each representing a different foursome. Each member teaches what they have designed and learned so that each foursome has now learned an entire dance sequence.*

1. In *think-pair-share*, a learning task or question is posed to the entire class. Students work in cooperative groups to develop their own ideas and build on them with insight, reaction and brainstorming from peers within their group before sharing them with a larger group or class.

Applied to a lesson.

*The class is asked to creatively chronicle their collective learning at the close of a unit of instruction and practice. Students decide to individually reflect on their own learning each day* using art as a creative way to conceptualize what happened that day. *Pairs get together to discuss and display their learning before sharing it with the entire class and further developing a shared picture of what took place. A class mural on the wall may be the chosen medium through which they will demonstrate their learning.*

1. *Problem-based learning* is similar to what was originally called coop-coop by Kagan (1990) where students work together in cooperative groups to produce a particular product or outcome to which each group member makes a contribution that can be evaluated. The groups then present their work product to the rest of the class. In some situations, the group outcomes might be combined for a final class product.

Applied to a lesson.

*Class members are assigned the task of examining whether sport is delivered equitably in their school. Small groups each select a focus for their research (e.g., gender, race, socio-economic, ability) which will culminate in a report that presents a picture of sport in their school. Each group will share their report with the entire class and determine how they might move forward in sharing it with the entire school community in an effort to further develop an equitable situation for all.*

These cooperative learning models allow learners to be active in their own learning by seeking and clarifying content from, and for, their peers. Frequently, students who need further explanation of a task or concept will be able to grasp it more easily if it is explained by another student, rather than the teacher. Regardless of the model used, students are generally assigned a task, a problem, or a goal to be solved or achieved as a group. Success at achieving the given task will be determined in part by the students' coopera­tive skills and willingness to work as a team. These, like any other skills, need to be taught and practiced.

Cooperative learning is intended to produce social and affective outcomes as well as psychomotor content mastery outcomes. When used appropriately, cooperative learning results in social gains among diverse groups and across skill levels, as well as more acceptance of students with disabilities and increased friendships among students in general (Slavin, 1990). Teachers often use cooperative learning models for student practice of instructional tasks after having used direct teaching for initial instruction. Cooperative learning which contains some elements of peer tutoring, could also be used in conjunction with the task model. In this sense, we see the Sport Education curriculum model encorporating a form of cooperative learning in the context of sport.

Size of group is important for cooperative learning. Smaller groups, even pairs, maximize participation and involvement. Keeping the groups small allows more time to practice speaking, listening, and making choices. A variety of techniques can be used to form small groups: self-selection, structured categories procedures, and mixed ability grouping. Depending upon the intent of the cooperative tasks, the number of students in your class, and their interactive skills, each of these strategies can be useful. In cooperative learning, student work is structured so that it requires interdependence in *the* achievement of group goals but also provides individual accountability for group members.

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| Learning Experience 12  Select a content area, identify a learning outcome for a lesson and design a cooperative experience that reflects pairs-check, jigsaw, think-pair-share or problem-based learning. |

*Teams* are a special type of group that we need to mention here because they are frequently used in physical education. Although generally composed of larger groups than those described previously, when used well, teams can result in many of the social benefits described for small groups while allowing students to take responsibility for their own experiences, thus moving teams into the self-instructional models category. One of the strengths of the Sport Education curriculum model (Chapter 9) is the meaning that students derive from the sport experience as a result of being a member of a team and the personal growth that comes from being affiliated with the same group of individuals over time. As students begin to develop an affiliation with their team and its members, they begin to feel an allegiance to, and responsibility toward, their peers and the team effort. To allow students to take responsibility for their sport experience, the Sport Education model has roles that team members take on and fulfill throughout the season. These roles tend to be more clearly defined because the team is formed for the purpose of competition. These roles include that of participant (everyone), captain or coach, referee, scorekeeper, statistician, and even publi­cist, manager, trainer, and a sports board. Although each of these roles should be defined so that students know their responsibilities to the team, the decision on who will define them may vary by teacher, experience of students, and con­text. Box # provides an example of roles and responsibilities for a post-primary dance season.

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| BOX #. Roles and Responsibilities for Post Primary Dance  Master of Ceremonies   * Introduces team members, dance theme and music selection * Attends to management of practice and application tasks   Choreographer   * Leads team practice * Assists teacher * Helps teammates learn dance moves   Fitness Trainer   * Designs appropriate warm-up tasks * Leads warm-up activities * Reports injuries to teacher * Assists teacher with first aid   Dance Board Member   * Assists with team selection * Monitors dance times during competition * Serves as Judge during dance competition   Disc Jockey (DJ)   * Maintains audio equipment * Chooses correct music for dance teams * Oversees music during dance competition   Reviewer/Critic   * Publicizes reviews via electronic newsletter, post on bulletin board * Reports on daily progress to dance team * Assumes responsibilities for absent teammates |

Self-instruction

*Self-instructional* models allow students to progress through a sequence of learning activities without the physical pres­ence, direction or supervision of a teacher. Among the models in this category are ‘individualized instruction’, ‘contracting’, and ‘personalized systems of instruction’ (PSI). Self-instructional models embed all the teaching functions in materials and typi­cally use a formal accountability system. Teachers who plan self-instructional lessons spend a great deal of time developing and improving those materials and maintaining records of student performance in an accountability system. As Box # indicates, self-instruction is one of the instructional models that puts students at the center of the learning environment.

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| BOX #. When Teaching Least is Teaching Best  When we think about teaching, our first thoughts typically are about the things teachers do in class. Too often when we think about evaluating teaching, we think about watching what the teacher does. A consistent message in this book has been that the best evaluation of teaching comes from watching what stu­dents do*.* Teachers do not have to be at the center of the stage for good instruc­tion to take place. Indeed, arguments can be made that, for students to become responsible, independent learners, the teacher must move off stage, so that the students themselves can occupy the central roles. There are several instructional models in this chapter that can accomplish that goal better than others.  Responsible, independent learners can no doubt develop from many of the variations of peer tutoring and self-instructional formats. Although responsibil­ity and independence are important qualities, one might also argue that learning to work together toward collective goals is also an important, humanizing expe­rience. Some peer models and most cooperative models would be appropriate for this goal.  It is O.K. for teachers to get off and stay off center stage in the instructional model. Enough is now known about classroom management for teachers to work gradually toward implementing instructional models that not only pro­mote student independence and responsibility, but also require collaboration and re­sponsibility for others and allow students to experience the multiplier effect that can be achieved through communal effort toward collective goals.  The models through which these goals can be achieved are not easy to imple­ment. Teachers need highly developed class management skills to develop an orderly environment in which students can learn to function effectively in these student-centered models. Even then, direct instruction might sometimes still be the preferred model because they need to be adapted to goals and context. |

Self-instructional models can be used within a traditional class setting, or they can be used for students to pursue learning independently from a class setting. Self-instructional models are widely used in post primary physical edu­cation for courses that take place away from the school, such as in a local bowling alley, indoor tennis arena, or a golf course. The nature of physical education content results in self-instructional models that often require students to work in pairs, triads, or small groups to complete the learning tasks. Thus, self-instructional models are often used in conjunction with peer teaching formats. Also, because of the need to develop clear and explicit materials for learners, self-instructional models take on many of the characteristics of task teaching.

The strengths of self-instructional models are the flexibility allowed to learn­ers and the possibility of matching learning tasks to student abilities more than is possible in a whole-class, direct instruction model. The flexibility of good self-instructional materials is that they can be used within a class or outside a class. There is also much to be said for students having the responsibility of com­pleting a learning sequence on their own by following the materials prepared by the teacher.

Self-instructional models rise or fall on how specific and appropriate the materials prepared for students are and the degree to which the accountability system motivates the students to complete the tasks. The self-instructional materials need to be complete and explicit, providing students with the help they need at the point when it is needed. Figure #shows self-instructional materials for the skill of volleying in soccer. These materials are typical of self-instructional materials to be used within a class.

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| Soccer Volley  Purpose: To redirect an aerial ball strategically  Type of volley: Foot, knee, shoulder or head  Skill Analysis:   * Align chosen body part with approaching ball * Focus eyes on approaching ball * Move body and body part toward approaching ball * Firmly contact body part to center of ball * Follow through in direction of intended flight   Task Learning Experiences:   1. With a partner, partner A throws the ball towards partner B's shoulder. Partner B volleys the ball, exe­cuting a shoulder volley. Repeat five times from a distance of 10 feet. Switch roles and repeat from 15 feet. 2. Repeat task #1, preceding the volley with two or three steps. Switch roles. 3. Repeat tasks #1 and #2, directing the ball to the left, right, and toward center. 4. Repeat tasks #2, #2, and *#3,* executing a knee volley. 5. Repeat tasks #2, #2, and #3, executing a foot volley. 6. With a partner, partner A throws the ball underhand so that it arches and drops toward partner B's head. Partner B executes a head volley. Repeat three times from a distance of 10 feet. Switch roles. 7. Repeat task #6, directing the ball to the left, right, and toward center. 8. Stand 10 to 15 feet from a wall and kick the ball into the wall. Volley the rebound with different body parts according to the level of rebound. For a more forceful rebound, precede the kick with two or three steps. Different levels of rebound can be achieved by contacting the ball at various points below the center. Repeat ten times.   Adapted from Zakrajsek & Carnes, 1986 |

Figure #. Self-instructional materials for the volley in soccer

*Contracting*

Contracting is a form of individualized instruction in which students sign a learning contract to complete a sequence of learning tasks according to a pre­determined set of criteria. Contracting is a popular self-instructional model for physical education courses completed at sites other than the school and under the jurisdiction of persons other than the physical educator. Thus, students might complete a golf unit or a bowling unit at local sites on their own without the supervision of the teacher. The contract specifies the learning tasks to be completed, the amount of practice required, and the criteria for performance necessary for a particular grade or fulfilment of a requirement. An example of a learning contract is shown in Figure #.

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| Golf Contract  Requirements:   * Practice at a local course for total of 20 hours * Complete test on golf rules at a score of 90% or better before playing on course * Play 36 holes of golf submitting completed score cards * Maintain a diary describing problems you encountered in skill practice and play. Submit diary at the completion of the golf unit * Play a final 18 holes at the end of the golf unit   Practice Tasks (20 hours minimum):   * On practice range, hit 9 iron, 5 iron and 1 or 3 wood 20 times each. Utilize critical element checklist for each practice. If possible, have a partner observe, provide feedback and complete a checklist. * On practice green, hit 25 9-iron pitch and chip shots. Utilize critical element checklist for each practice. * On practice green, putt 50 putts of varying lengths and slopes. * As you improve, spend more time practicing the tasks you are having difficulty with. * Have practice times attested by a partner or course employee.   Playing Tasks (minimum of 36 holes):   * Play at least nine holes at a time. * Play following official and local rules. * Complete score card and have score attested. * Record thoughts and reactions in your diary. |

Figure #. Golf Learning Contract

*Personalized system of instruction*

Personalized system of instruction (PSI) is a self-instructional model in which content is divided into small units students must master before moving on to other units. PSI models require developing specific instructional tasks and clear mastery criteria. Students then practice the tasks until they meet the criteria before moving on to the next task. PSI allows for individual progress through a series of learning tasks. At the end of a PSI unit, students will differ in how much they have learned rather than how well they can perform. Assessment is typically done in terms of how many tasks are completed within the time constraints of the unit. PSI could also be used away from the time demands imposed by class periods and during school days. If so, students who need extra time to master a series of tasks could do so. Figure # shows two tasks from a PSI Disc unit of ultimate, field events, guts and golf. The unit is composed of a series of such tasks.

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| Self-Caught Flight Events The disc is thrown and then must be caught with one hand (two hands for beginners). Participants are to challenge themselves to the tasks, record their efforts and keep a journal of all events as they progress.  **1) Maximum Time Aloft**  The disc is thrown and then caught with one hand. The goal is to maximise the amount of time elapsing between the disc being released and being caught. The event demands a powerful and controlled throw and ability to ‘read’ the flight in order to execute the catch. This event tends to be most successful if there is a stiff breeze.  **2) Throw, Run & Catch (TRC)**  The disc is thrown then the thrower must run to catch it one handed. The distance from the point where the disc is released and to where it is caught is the score. This event demands good technical ability to throw a long, hovering disc, combined with fast sprinting capability and reliable catching. |

Figure #. PSI Task Example from a Disc unit

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| Learning Experience 13  Identify content for which you might develop a personalized system of instruction for your students. Outline what you envision taking place and develop the expectations, requirements and steps that will guide student participation. |

Service learning

Nick Cutforth (2000) describes service-learning as a “teaching method that provides opportunities for students to acquire academic, career, social, and personal skills through community service projects” (p. ). He highlights the main reason for including service-learning in education programs is that students “learn best by doing, by serving, and by reflecting on their experience” (p. ). Service learning intends for students to learn about social issues, improve social and interpersonal skills, and develop leadership and positive civic qualities while planning and delivering a service to the community in response to an identified need. Service learning is a means to set the stage for students to become engaged and involved with various issues in their community bringing them back to the classroom to serve as the basis for academic learning and aligned learning experiences.

The National Youth Leadership Council (<http://www.nylc.org>) identified four types of service learning initiatives in which students can become involved. We have provided examples of these applied to a physical education / physical activity setting.

1. *Direct Service Learning* involves face-to-face type projects that directly influence those being served such as designing and delivering workshops for other students or adults who may be in need.
2. *Indirect Service Learning* is focused on projects aimed at community or environmental issues rather than the individuals to whom they interact such as maintaining community activity or playground space or restoring a trail system in the local parklands.
3. *Research-Based Service Learning* involves projects where students are required to locate, access and analyze information on a given topic and share that information with individuals to impact practices. This might include developing a video to be used in the school fitness center highlighting safety precautions and how equipment is to be used appropriately or using the information gained in the preceding jigsaw assignment on equity in the sport provision at the school.
4. *Advocacy Service Learning* is intended to influence the community by educating them or bringing issues to their awareness. In the case of physical education this might include young people investigating and promoting physical activity and healthy eating as a means of educating the public on living an active and healthy lifestyle.

Determining how to employ service-learning in physical education is like selecting any other instructional model, it depends on the content being taught, the expected learning outcomes, the abilities and behavior of the students, the curriculum model within which the lesson is a part, how feedback might best be provided, and the decisions the teacher makes in terms of giving students responsibility and choice. Box # provides ideas for health and physical education service-learning projects as suggested by the 2007 KIDS Consortium, www.kidsconsortium.org

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| **Health and Physical Education Service-Learning Projects**  ***Elementary***   * Students decided that their community needed a fun and safe environment to encourage physical exercise. So the students took over the entire planning of the annual fun run at their school and designed markers for the new running path in the area. * Students learned the basics about nutrition and exercise, including the various winter sport activities that New England has to offer. The students wanted to learn how to snowshoe safely so they partnered with experts from the Kittery Trading Post. Students then shared what they had learned about snowshoeing with the community through written and oral presentations, in hopes that they would encourage others to engage in healthy activities. * Students learned about the importance of starting healthy eating and exercising habits at a young age and decided to work with the Jump Rope for Heart Campaign to teach their peers about healthy habits. The students recruited sponsorships and participants for a Jump Rope for Heart fundraiser, which raised over $2,100 for the American Heart Association. * Students worked with their Public Schools Wellness Policy Committee to help develop, implement, and monitor new nutrition policies. The students also put together a healthy kid-friendly cookbook and held a healthy food fair to share what they learned about nutrition with the whole community. * Students learned about the number of accidents and injuries that occur because people are not wearing helmets or seatbelts. Students partnered with Life Flight and the local Fire & Rescue among others to address this dangerous problem. The students held a public safety field day, a local health fair, made videos and PowerPoint presentations and even meet with the governor to discuss new safety legislation. * Students learned that their school needed better sun safety education. The students researched UV rays, skin cancer and sun safety and then proposed a new school policy about sun safety. They also made and distributed posters and informational brochures to educate others in their community about sun safety.   ***Middle School***   * Working with community health services, physical education students developed age appropriate   exercises for senior citizens. The students then provided a place and program for “seniors” to exercise during the winter months.   * After learning about public policy, students decided there was a need for better public policy preventing alcohol advertisers from deliberately targeting young people. The students researched alcohol advertisements and proposed new policies, which they presented at two city-wide public forums and in letters to their local elected officials. * After a student wrote a personal essay about his experience with bullying he decided to do an independent study project addressing the issue of bullying in schools. Working with the school administration, the school newspaper and his teacher, the student published his essay in the school newspaper to encourage discussion about the issue and created a computer game to simulate the effect of bullying on all individuals involved. * Students learning about public policy decided that they wanted to do something about the problem of child abuse and neglect in their community and state. After much research and brainstorming, the students proposed a policy that would require all prospective teachers to be trained in recognizing the signs of child abuse and neglect. The students shared their policy with their local representative who drafted their policy as state legislation.   ***High School***   * Students worked with the student council on the annual *Every 15 Minutes* program, an alcohol education and awareness program. The students put together posters with graphs and tabular charts depicting information about blood alcohol content and displayed them in the school during the two-day program. * Students learned about Lyme Disease, which is a major problem in their area. The students then decided to educate their community about the dangers of Lyme Disease through a variety of projects including: a radio interview, public service announcement, puppet play, benefit dinner and a webpage. * Students in a Medical Occupations Class were asked by the March of Dimes to educate the community on the importance of folic acid in their diets. The students agreed to work on the project. After doing extensive research on folic acid they created slideshows, posters and pamphlets of information on folic acid, which they shared with their peers. They also gave copies of their materials to school nurses and the March of Dimes. * Students learned that emergency responders in their town needed a more effective and efficient way to identify possible concerns and hazards (overhead electrical wires, staircases, children’s bedrooms, etc.) at an emergency scene. The students conducted surveys of potential concerns and hazards in their local community and created a computer prototype that can quickly identify hazards; this prototype was presented to the Town Council. |

Downloaded from the 2007 KIDS Consortium, [www.kidsconsortium.org](http://www.kidsconsortium.org)July 30, 2012

The Service Learning 2000 Centre in California highlights seven elements they recommend are essential for service-learning to be effective. These seven elements include:

1. Integrated Learning

* Service-learning goals evolve from knowledge, skill or values that make up broader classroom and school goals
* Service-learning and academic learning content is reciprocal
* Life skills learned through service-learning outside the classroom are integrated into overall learning

1. High Quality Service

* Service responds to an actual community need recognized by the community
* Service is age-appropriate and well organized
* Service is designed to achieve significant benefits for the students and community

1. Collaboration

* Service-learning should collaboratebetween students, community-based organization staff, support staff, administrators, faculty, and recipients of service
* All partners benefit from the project and contribute to its planning

1. Student Voice

* In choosing and planning the service project
* In planning and implementing reflection, evaluation and celebration
* In roles and tasks that are appropriate to their age

1. Civic Responsibility

* Service-learning should promote student responsibility to care for others and contribute to the community
* Students understand how they impact their community as a result of service-learning

1. Reflection

* Establishes connections between service experiences and academic experiences
* Occurs throughout service-learning (before, during, and after)

1. Evaluation

* All partners are involved in evaluating the service-learning
* Evaluation measures progress toward learning and service goals

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| Learning Experience 14  What might a service learning project look like in your physical education program? Identify a need that is apparent in your community and determine how you might build a response to it into your physical education class as a project for the students to complete. Follow the steps outlined above to develop the service learning project highlighting where student voice will be invited. |

As we have demonstrated in this chapter, effective instruction comes in teacher mediated and student mediated form. Regardless of age group, curriculum or instructional model, or content selected within the instructional task system, we know that maintaining a safe learning environment through an effective task managerial task system is essential. As we move into Chapter 14, we will consider the generic teaching strategies that are necessary for effec­tive teaching in both the managerial and instructional task systems.

SUMMARY

1. Instructional models can be categorized as teacher mediated or student mediated.
2. If one instructional model is more effective than another, it is only within a particular context and with a particular group of learners, and then only because it matches the needs and the context in a particularly effective way.
3. Active teaching is a framework for understanding the major skills that effective teachers show in their work.
4. There is no hierarchy of instructional models; choice of instructional model should be based on a) personal skills and preferences of teachers, b) characteristics of the learners being taught, c) the nature of the content being taught, and d) the context within which teaching takes place.
5. The purpose of guided practice is to ensure that students understand and can perform a task sufficiently well to benefit from independent practice.
6. The purpose of independent practice is to engage in a sufficient number of successful repetitions to be able to use the skill appropriately in an applied context.
7. Direct instruction is the most frequently used model in physical education; it is successful partly due to the organizational and supervision aspects of the model that allow teachers to manage student engagement.
8. Task teaching refers to organizing the learning environ­ment so that different students can engage in different learning tasks at the same time and includes station teaching (rotating from one station to the next) as well as inclusion teaching (performance options available within each task to accommodate variable ability levels).
9. Teaching through questions is a variation of direct instruction in which student responses are not prescribed, typically taking a guided discovery or problem solving approach.
10. Students need to be prepared to take part effectively in student-mediated instruction which includes the particular skills (observing, feed­back, etc.) and the appropriate behavioral norms for cooperation.
11. In peer tutoring and reciprocal models, students take on instructional roles, typically in pairs, triads or small groups and are prepared to assess peer performance and provide feedback.
12. Small group and cooperative learning involve student work that is structured so that it not only requires interdependence in the achievement of group goals, but also provides individual accountability for members of the learning groups.
13. Teachers do not have to be center stage; good instruction and learning often take place with students occupying more central roles.
14. Self-instructional models allow students to progress through a sequence of learning activities without the immediate presence of the teacher, with teacher-prepared materials essential for successful implementation.
15. Contracting and PSI are self-instructional models used both in regular classes and independent study.
16. Service learning intends for students to learn about social issues, improve social and interpersonal skills, and develop leadership and positive civic qualities while planning and delivering a service to the community in response to an identified need.

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