

SPECTRUM OF TEACHING STYLES EDUCATIONAL CURRICULUM: MASSIVE OPEN ONLINE COURSES (MOOC)

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Abstract

The Spectrum of Teaching Styles (Spectrum) equips teachers with the fundamental knowledge for developing a repertoire of instructional behaviors that embrace the objectives needed to educate students. It is comprised of 11 landmark styles (Styles A-K), five within the reproduction cluster where learners reproduce modeled tasks and six within the production cluster where learners discover new knowledge, with each style meeting a unique set of teacher and learner decisions and subsequent educational objectives. In Style A (command), the teacher is the primary decision maker, and in Style K (self-teaching), the learner is the primary decision-maker. Decision-making responsibility shifts from the teacher to the learner in a progressive manner from Style A through Style K. The Spectrum Institute for Teaching and Learning (SITL) has created the first Spectrum educational curriculum (MOOC) to offer interested teachers and coaches an opportunity to learn about the 11 teaching styles. It is comprised of 13 modules, one that introduces the Spectrum, a series of 11 that present each landmark teaching style separately, and a final module to close/summarize the Spectrum. Each of the modules is composed of a series of sequenced educational activities structured in four parts, PART 1, Warm-up – ENGAGE to trigger motivation to explore, (2) Part 2, Illustration – INTRODUCE to help form a preliminary image, Part 3, Specialization – LEARN the details to expand knowledge, and Part 4, Evaluation – CHECK to examine understanding, all of which lead to WISE teaching and WISE learning. These activities include readings, PowerPoint presentations, video recordings of real-life classroom examples of each style, reflection activities, and quizzes. The MOOC (<https://spectrumofteachingstyles.online/>) is available to individual learners as well as university faculty who wish to incorporate the modules in courses taught. In this presentation, a sampling of the educational activities delivered within each module will be presented and discussed.

Keywords: MOOC, Spectrum, teachers.

1 INTRODUCTION

1.1 Spectrum Theory

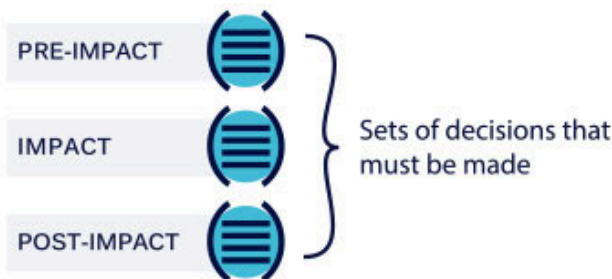
1.1.1 An Overview of the Spectrum Framework

The Spectrum offers a framework describing the structure –the Anatomy—of Teaching. The term Anatomy is defined as the: “study of the structure or internal workings of something.” The following overview of the Spectrum theory presents the Anatomy of all Teaching events [1].

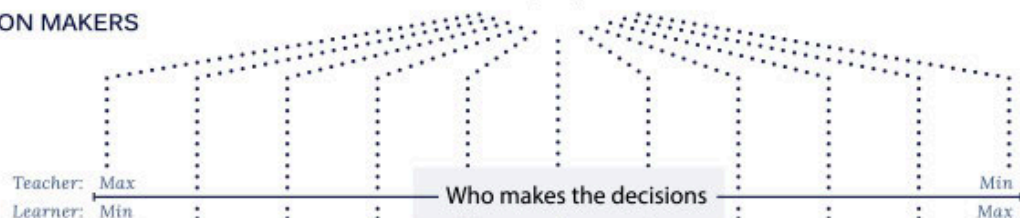
1. THE AXIOM

Teaching is a chain of decision making

2. THE ANATOMY OF ANY STYLE



3. THE DECISION MAKERS



4. THE SPECTRUM



5. THE COGNITIVE CLUSTERS

6. THE DEVELOPMENTAL EFFECTS



Figure 1. Structure of the Spectrum (Spectrumofteachinstyles.org, 2025)

1.1.2 The Axiom

The entire structure of the Spectrum stems from the primary premise that teaching is a chain of decision making, and decisions govern teacher-learner transactions during the instructional process. Every deliberate act of teaching is the result of a previous decision like interaction decisions such as how students are organized, how space, time, and equipment, are managed in an episode, how the subject matter is presented, how the students and teacher interact, etc. Each Spectrum style has a particular structure of teacher and learner decisions that define the roles of the teacher and learner and that define the objectives reached by the style. Teacher and learner decision making unifies the 11 landmark teaching styles that compose the Spectrum of Teaching Styles [2,3].

1.1.3 The Anatomy of Any Style

The anatomy of any style does not describe any one specific approach but rather it provides the overall structure ALL teaching styles demonstrate. The Anatomy is composed of the conceivable categories of decisions that must be made (deliberately or by default) in any teaching-learning transaction. These categories are grouped into three sets [1,2]:

- **The pre-impact set** includes decisions that define the intent—the specific planning and preparation decisions for what and how events are to occur.
- **The impact set** includes decisions related to the implementation—the execution of the pre-impact decisions during the actual face-to-face interaction and performance of the tasks.
- **The post-impact set** includes decisions that deal with assessment and feedback of the learner's performance during the impact and assessment of the overall congruence between the intent and the action of the learning experience.

1.1.4 *The Decision Makers*

Both teacher and learner(s) can make decisions in any of the decision categories delineated in the anatomy. When most or all the decisions in a category are the responsibility of one decision maker (e.g., the teacher), that person's decision-making responsibility is at "maximum," and the other person's (the learner) is at "minimum." Each style indicates specific and different decision categories that the teacher and the learner are responsible for [1,2].

1.1.5 *The Spectrum*

By establishing who makes which decisions, about what and when, it is possible to identify the anatomy—the decision structure—for each of the 11-landmark teaching-learning approaches as well as alternative approaches that lie between each style on the Spectrum. In each consecutive landmark style, specific decisions are systematically shifted from teacher to learner, thereby allowing significantly new objectives to be emphasized until the range of Spectrum teaching-learning approaches is delineated [1,2].

The following is a brief description of each of the 11 teaching styles that make up the spectrum [1,2].

- **Command Style (Style A):** The defining characteristic of the Command Style is to exactly reproduce and replicate an anticipated response or performance in a short period of time so that the specific Command Style objectives in subject matter and behaviour can be developed. Cognitively, the Command Style emphasizes automaticity—an immediate synchronized, orchestrated performance.
- **Practice Style (Style B):** The defining characteristic of the Practice Style is the initiation of independence by making nine decisions while practicing a memory/reproduction task and receiving private and individual feedback from the teacher.
- **Reciprocal Style (Style C):** The defining characteristics of the Reciprocal Style are social interaction while learning to give content feedback to a partner. This style's focus is social reciprocation while learning to make five decisions that are inherent when giving and receiving feedback. Observers offer their partner content feedback using teacher prepared specific criteria. The teacher circulates and observes the partnerships for appropriate use of the criteria information and supportive verbal feedback interactions.
- **Self-check Style (Style D):** The defining characteristic of the Self-Check Style is developing the decisions necessary for independence while practicing a reproduction task and initiating self-checking skills using a prepared criterion. The teacher circulates among the students' asking questions that illicit conversation (not teacher judgment) about the student's performance assessment. This style is not initially appropriate for the novice who is unfamiliar with and inexperienced in the content.
- **Inclusion Style (Style E):** The defining characteristics of this style are inclusion and continuous participation of students in the same task. Each task is design with multiple levels of difficulty. Providing multiple entry levels in the practice of the tasks permits learners to make a personal assessment about their performance. Learners practice from a beginning point where they can perform the task and the various levels of difficulty permit continued participation. Additionally, learners engage in self-assessment using criteria prepared by the teacher. The teacher circulates and engages in conversation about the quality of the performance success and their level choices. In this style, no one is excluded, and each learner is offered the opportunity for continued participation.
- **Guided Discovery Style (Style F):** The defining characteristic of this style is the carefully crafted series of questions that lead learners to discover a predetermined response. The teacher's skill in designing a series of logically sequenced questions that gradually lead the learner to the

anticipated target is the crux of this style. If students do not reach the target, the questions need to be re-examined.

- **Convergent Discovery Style (Style G):** In this style, the teacher selects a new and unfamiliar subject matter that invites the learners to apply their reasoning skills to ask questions that logically and sequentially lead to the discovery of the single correct anticipated response.
- **Divergent Discovery Style (Style H):** The defining characteristic of the Divergent Discovery Style is the engagement in the discovery of new content by producing multiple responses to an unfamiliar specific problem, question, or situation. Each learner experiences the emotional and cognitive process of going beyond known information. The teacher encourages the production of responses, not any single solution.
- **Learner Designed Individual Program Style (Style I):** The defining characteristic of this style is discovering the process for identifying and designing a solution to a subject matter problem that has multiple functions and parts. The teacher designs a general question and then shifts the design of the program to the learner. All subject matter details concerning the ultimate intent, issues to investigate, rationale for the program design, sequence of events, etc., as well as the assessment criteria are shifted to the learner. Learners experience the volume of decisions that are required when designing complex programs. The role of the learner is to make decisions about how to investigate the general subject matter topic, to produce questions that lead to a specific focus within the general topic, to produce questions that result in identifying the process and procedures, to discover the solutions/movements, and to designate the performance criteria.
- **Learner Initiated Style (Style J):** The defining characteristic of the Learner-Initiated Style is individual learner initiation and desire to produce his/her own learning experience. The learner, among other decisions, decides the learning intent, objectives, procedures, logistics, and assessment criteria, etc. The learner periodically informs and updates the teacher as decisions are made. The teacher is not judgmental; rather the teacher's role is to ask questions for clarification with the intention of leading the student to examine omitted decisions or to reinforce the decision(s) made.
- **Self-Teaching Style (Style J):** The defining characteristic of the Self-Teaching Style is the passion, motivation, and tenacity of an individual to accept the decision-making roles of both teacher and learner. The content selected is determined by the individual, and the rationale and process used to identify the objectives of the experience are made by the individual.

Teacher and learner decision making unifies the 11 landmark teaching styles that represent two cognitive capacities of learners: the capacity for reproduction thinking and for production thinking [4].

1.1.6 The Cognitive Clusters

The Spectrum styles are clustered according to the thinking process they rely on to accomplish their intent. The first five styles (Command, Practice, Reciprocal, Self-check, and Inclusion) form a cluster of teaching options that foster reproduction (memory) thinking. The remaining styles (Guided Discovery, Convergent Discovery, Divergent Discovery, Learner-designed Individual Program, Learner-initiated, and Self-teaching) form a cluster of teaching options that invite production (discovery) of new knowledge. Additionally, all of the teaching styles form a cluster that has the capacity to venture into the realm of the new and yet unknown, the creative process. The line of demarcation between the reproduction and production clusters is called the discovery threshold, which identifies the cognitive boundaries, the cognitive focal point of each cluster [1,2].

1.1.7 The Developmental Effects

The Developmental Channels (DC), represent the universal paths along which we grow. Within each channel is an infinite array of human attributes (human characteristics/traits) that reflect our thinking and guide our behaviour in each channel. These universal pathways are physical, social, emotional, cognitive, moral/ethical, mindfulness, sexual, and two extrinsic categories technological and financial [1,2]. These channels can be used to examine how the decision-making structure in each landmark style impacts the learner. Each landmark style is defined by a specific teacher and learner decision-making structure. These decisions emphasize distinct objectives that the learners can develop. How the learners develop these objectives can be explored along each developmental channel [2,3].

1.2 Spectrum Institute

The Spectrum Institute for Teaching and Learning (SITL) is a non-profit organization dedicated to improving education. The mission of the SITL is to provide a center for people from around the world to come and work together in the common commitment of improving quality teaching and schooling. The central organizing theme undergirding the Institute, the reason for its existence, is to improve education through an alternative view of teaching, the Spectrum of Teaching Styles. The Spectrum Institute serves as a clearinghouse for information and research about this unifying theory that delineates an array of effective teaching and learning styles. Besides offering teachers a repertoire of alternative teaching and learning options from Command to Discovery, the Spectrum theory offers: solid implementation practices; a mechanism for change in education; and a framework for valid and cumulative progress. In addition to providing a center for Spectrum research and development, the Institute offers workshops and training services for teachers and scholars and an active website for the exchange of Spectrum information. The Spectrum Institute is committed to the betterment of humanity through its continuous research and pedagogical progression [1].

Among the different initiatives being carried out by SITL are the Spectrum MOOC Courses.

2 METHODOLOGY

The Massive Online Open Courses (MOOC) can be defined as free, open courses, mainly composed of Open Educational Resources (OER) and designed to be taken through a platform or personal learning environment installed on the Internet, by any person, autonomously, without the need for a teacher or network support tutor on the other side of the connection [5].

The use of MOOCs in education is interesting because they make it possible to [5, 6]:

- Disseminate knowledge more effectively, reaching new audiences and enhancing the reputation of institutions, which in this way are publicized as innovative entities and sources of high quality knowledge. Public institutions thus give back to society the investment that society has made in them.
- Allow anyone to continue training throughout their lives in a very specialized way and to have new learning experiences free of charge, whether their ultimate interest is to obtain an accreditation or recognition, or just to train conveniently in response to an intellectual need or concern.
- Serve as a way for teachers to promote their teaching activity and their publications, thus attracting new students to regulated courses and permanent and continuous training. MOOCs also manage to increase teacher's invitations to conferences and congresses, as they are more popular authors.
- As they are free and open, no academic prerequisites are needed although it is always left up to the different institutions and teaching teams to indicate and set the minimum levels or prerequisites necessary to be able to take them with guaranteed success.

MOOCs have the following distinguishing characteristics [7]:

- They are an educational resource that bears some resemblance to a class.
- They have start and end dates.
- They have evaluation mechanisms.
- They are online.
- They are free to use.
- They are open via the web and has no admission criteria.
- They allow for large-scale interactive participation of hundreds of students.

3 RESULTS

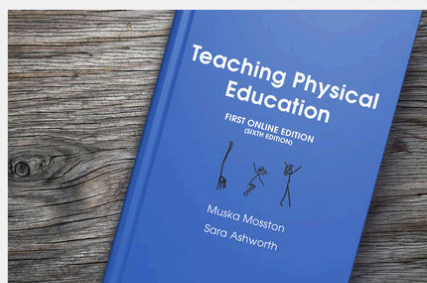
3.1 Spectrum MOOC Courses

The Spectrum Institute for Teaching and Learning has created the first Spectrum educational curriculum (MOOC) to offer interested teachers and coaches an opportunity to learn about the 11 teaching styles. It is comprised of 13 modules, one module that introduces the Spectrum, a series of 11 modules that

present each landmark teaching style separately, and one module to close/summarize the Spectrum. At the moment, the SITL has 7 courses available.

[SiteHome](#)[MyCourses](#)[Important Links](#) ▾[Course Support](#) ▾[Search](#) [Log in](#) [Register](#)

Available courses



COURSE 1: Introduction to the Spectrum of Teaching Styles

Course modified date: 18 February 2025

Enrolled students: 202

[Enter this course](#)

COURSE 2: Command Style of Teaching (A)

Course modified date: 18 February 2025

Enrolled students: 81

[Enter this course](#)

COURSE 3: Practice Style of Teaching (B)

Course modified date: 18 February 2025

Enrolled students: 79


[Enter this course](#)

COURSE 4: Reciprocal Style of Teaching (C)

Course modified date: 18 February 2025

Enrolled students: 70

[Enter this course](#)

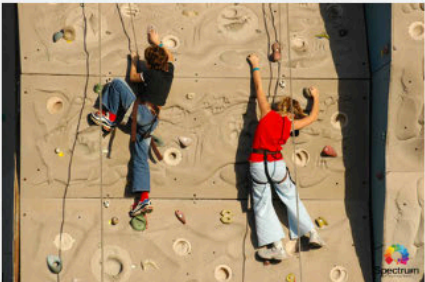


COURSE 5: Self-check Style of Teaching (D)

Course modified date: 18 February 2025

Enrolled students: 65

Enter this course




COURSE 6: Inclusion Style (E)

Course modified date: 18 March 2025

Enrolled students: 72

Enter this course



COURSE 7: Guided Discovery Style (F)

Course modified date: 23 March 2025

Enrolled students: 27

Enter this course

Figure 2. Available Spectrum MOOC Courses

Each of the modules is composed of a series of sequenced educational activities structured in four parts, PART 1, Warm-up – ENGAGE to trigger motivation to explore, (2) Part 2, Illustration – INTRODUCE to help form a preliminary image, Part 3, Specialization – LEARN the details to expand knowledge, and Part 4, Evaluation – CHECK to examine understanding, all of which lead to WISE teaching and WISE learning. These activities include readings, PowerPoint presentations, video recordings of real-life classroom examples of each style, reflection activities, and quizzes. Each time a course is successfully completed, a certificate will be issued.

The Spectrum MOOC (<https://spectrumofteachingstyles.online/>) is available to individual learners as well as university faculty who wish to incorporate the modules in courses taught. In this presentation, a sampling of the educational activities delivered within each module will be presented and discussed.

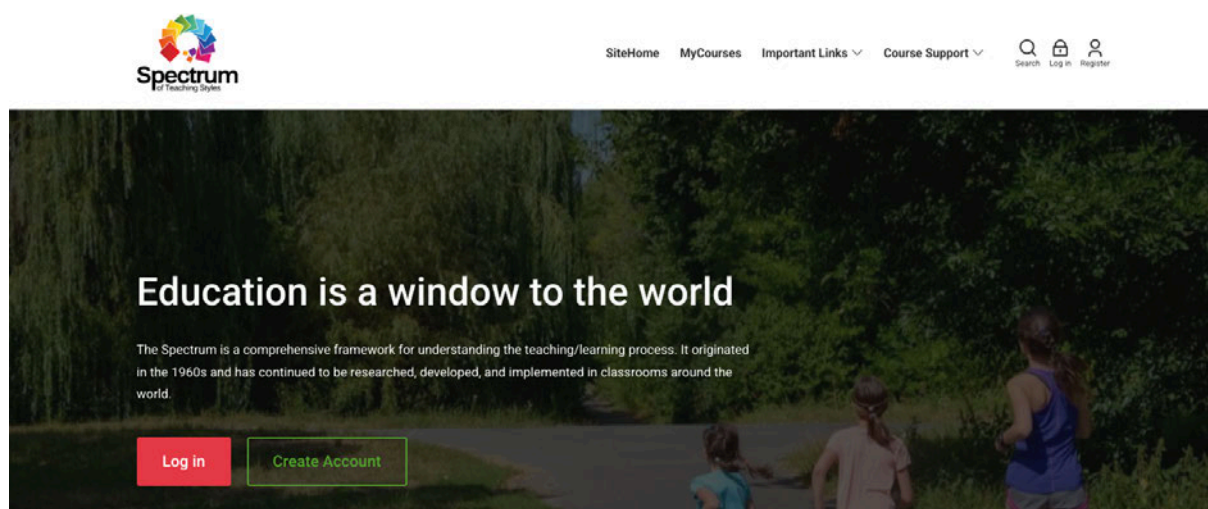


Figure 3. Spectrum MOOC Courses Website.

Table 1. Data about Spectrum MOOC

	<i>Opening Dates</i>	<i>Enrolled students 29th April 2025</i>	<i>Certificates</i>
<i>COURSE 1: Introduction to the Spectrum of Teaching Styles</i>	September 2023	212	83
<i>COURSE 2: Command Style of Teaching (A)</i>	October 2023	89	0
<i>COURSE 3: Practice Style of Teaching (B)</i>	October 2023	86	17
<i>COURSE 4: Reciprocal Style of Teaching (C)</i>	January 2024	78	22
<i>COURSE 5: Self-check Style of Teaching (D)</i>	February 2024	75	22
<i>COURSE 6: Inclusion Style (E)</i>	February 2025	81	19
<i>COURSE 7: Guided Discovery Style (F)</i>	March 2025	39	0

4 CONCLUSIONS

A total of 660 students have enrolled in the 7 courses that are available. From SITL are working on the other courses that include the Spectrum educational curriculum (MOOC). In addition, as a future line of work we will offer the MOOC in other languages (e.g. Spanish). The Spectrum MOOC is a great opportunity for teachers to learn about and deepen the fundamental knowledge for developing a repertoire of professional behaviors that embrace the objectives needed to connect with and educate students.

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