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Cooperative Learning and the affective domain

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Cooperative Learning and the affective domain

Abstract

This paper seeks to give practical examples of how teachers can promote the development of students' affective learning using two Cooperative Learning structures: Student Teams Assessment Divisions (STAD) and Jigsaw Classroom. It also includes a taxonomy aimed to help teachers value and assess their students' affective learning. The paper concludes by suggesting that if Physical Education is serious in its commitment to help all students learn across the different learning domains (i.e. physical, cognitive, social and affective), teachers need to be more selective in their choices of pedagogical approaches. In short, they must select those approaches capable of developing learning in the affective domain (e.g. Cooperative Learning and structures like SDAT and Jigsaw).

Introduction

Physical, cognitive, social and affective learning outcomes are positioned as the key learning products of Physical Education (PE) capable of promoting a physically active life (Casey & Goodyear, 2015; Fernandez-Rio, Sanz, Fernandez-Cando & Santos, 2017). Yet, while all learning domains are seen as important in research, policy and practice (United Nations Educational, Scientific and Cultural Organization, 2015), the affective domain, in particular, has been overlooked or under considered. This is, perhaps, because (i) it is often difficult to define (Hellison, 1987), (ii) it is complex and difficult to track (Witt, 2015), and (iii) effective procedures and practices to support affective learning development are less well-defined (Bailey et al. 2009). In short, teaching affectively has been an enduring problem for PE.

Confusion has existed around affective learning and its place within school PE for several decades. In the 1970s, McGee (1977) asked how affective learning might be measured. In the 1980s, Stoner (1982) and Mood (1982) argued "Yes!" and "No!" respectively with regards to the place of affective learning in PE. Subsequently, Cutforth and Parker (1996), Gallo (2003) and

31 Samalot-Rivera (2014) have all argued for the benefits of affective learning, and the need for
32 greater emphasis on its teaching in PE.

33
34 At the core of this confusion is a lack of understanding about what affective learning is and does,
35 and how to teach it. Indeed, writing nearly 30 years ago in JOPERD, Hellison (1987, p. 41)
36 stressed that affective learning and development: “is a conceptual nightmare” and lacks
37 “instructional strategies and activity experiences” aimed at “achieving affective objectives”. In
38 what remains of this paper we seek to give practical examples of how teachers can promote the
39 development of students’ affective learning.

40 41 **Defining Affective Learning**

42
43 Krathwohl, Bloom and Masia (1964, p. 7) defined the affective domain (where affective learning
44 occurs) as: “Objectives which emphasize a feeling tone, an emotion, or a degree of acceptance or
45 rejection.... internally consistent qualities of character and conscience...interests, attitudes,
46 appreciations, values, and emotional sets or biases”. When considered from a modern
47 perspective, Quality PE (QPE) includes the teaching and enhancement of young people’s
48 thinking, attitudes and values (UNESCO, 2015): what we might describe as affective learning.

49
50 In models-based practice (Metzler, 2011) affective learning has been used as a broad term to
51 describe both social and psychological aspects of learning. The problem is that affective learning
52 has often been related to social learning only. Dyson (2002) argued that Cooperative Learning is
53 an effective strategy for promoting affective learning, focusing on social learning outcomes such
54 as cooperation and students’ ability to encourage each other. The reason for associating affective
55 learning with social learning has perhaps emerged because affective learning also refers to
56 psychological and internal processes that are difficult to observe, assess and evaluate.
57 Furthermore, because of these difficulties, it is often measured through self-reported instruments
58 that assess student liking rather than learning (Witt, 2015).

59
60 There are echoes of Krathwohl et al.’s (1964) definition in SHAPE America’s (2014)
61 standards. Standards 4 and 5 relate to affective learning and argue for educators to promote

62 (i) responsible personal and social behavior, and (ii) the value of physical activity for
63 health, enjoyment, challenge, self-expression and/or social interaction. In seeking to show
64 how PE might conceptualize affective learning in practice, the following section begins to
65 look at what might be observable.

66

67 **Observing Affective Learning**

68

69 To support learning and development, Goodyear and Dudley (2015) argued that teachers need to
70 be able to diagnose and evaluate students' learning. To achieve this, teachers need to focus on
71 what students *do*. However, what teachers should be able to observe students *do* regarding the
72 affective domain is less well-defined (Witt, 2015).

73

74 Two of the biggest obstacles Krathwohl et al. (1964) encountered with regards to assessing the
75 affective domain were: (i) the inadequacy of assessment techniques, and (ii) the apparent ease
76 with which a student might detect and exploit the understanding that some responses are
77 rewarded while others are penalized. The taxonomy put forth by Krathwohl et al. (1964) defined
78 affective learning as a multi-stage process of internalization through which students initially
79 received and eventually characterize affective behaviors.

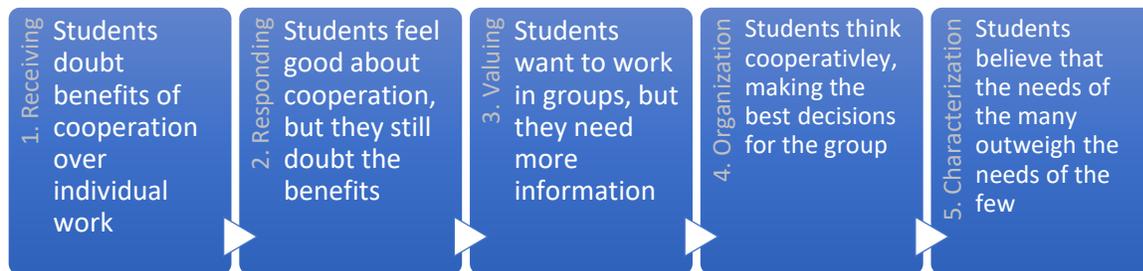
80

81 The taxonomy begins with an individual receiving a stimulus that might initiate an affective
82 behavior. At the *first stage (receiving/attending)*, students become aware of the stimuli (1.1),
83 they show willingness to receive it (1.2), before finally looking for the stimulus (1.3). At the
84 *second stage (responding)*, students respond regularly to the stimulus (maybe because they
85 acknowledge that they need to if they are going to succeed) (2.1), they willingly accept that such
86 a response is a good thing (2.2), because it makes them feel good. At the *third stage (valuing)*,
87 students come to hold a certain value and they wish to continue to develop their understanding of
88 the value (3.1), they actively seek out ways to exhibit it (3.2), and show an ongoing commitment
89 to act in this way. At the *fourth stage (organization)*, students might change their code of ethics
90 (4.1), weighing future decisions against it (4.2). At the *fifth and final stage (characterization by a*
91 *value or value complex)*, students “respond very consistently to value-laden situations with an
92 interrelated set of values” (Krathwohl et al., 1964, p. 35). In doing this, they might view all

93 problems in terms of the evidence base they can see rather than prejudice (5.1), and then develop
94 a personal philosophy of life (5.2).

95
96 Expanding this taxonomy from a PE perspective – and drawing on the notion of Cooperative
97 Learning - at the *first level* individuals might become aware of the teacher’s belief that
98 cooperation – through group work – is important, but might also wish to work alone. At the
99 *second stage*, they know that they will succeed more in the task if they cooperate, but feel that
100 they could do better on their own, even though they feel good about cooperating. At the *third*
101 *stage*, students feel that they want to work in groups, but still needs to know more about how to
102 interact cooperatively. The *fourth stage* sees individuals thinking cooperatively rather than
103 individually, and making decisions based on what they feel is best for the group. At the *fifth and*
104 *final stage*, decisions are made about the group’s collective needs and such a philosophy (the
105 needs of many outweigh the needs of few) determine the way individuals act and responds in
106 different situations (Figure 1). Teachers could use Krathwohl et al.’s taxonomy (1964) as a rubric
107 to assess students’ affective development and learning (Table 2).

108



109
110 Figure 1. The affective continuum applied to Cooperative Learning.

111
112 This taxonomy is used in response to an identified gap in the knowledge base about the affective
113 domain generally (Gillies, 2016) and within Cooperative Learning literature more specifically
114 (Casey & Goodyear, 2015). The following section explores how Krathwohl et al’s. (1964)
115 taxonomy and the Cooperative Learning structures of Student Teams Achievement Division
116 (STAD) and Jigsaw Classroom could be used to promote affective learning.

117

118 **Cooperative Learning and Affective Learning**

119

120 Cooperative Learning is not a uniform, homogenous approach to teaching and learning. Instead,
121 it has a diversified body of methods and instructional procedures that can be used to promote
122 learning in multiple domains (Sharan, 2015). Given that the intent of this paper is to focus on the
123 affective domain, it now draws on two Cooperative Learning methods (or structures) proposed
124 by Slavin (1996). They have been selected due to their theoretical foundations in psychology and
125 motivation and, therefore, a strong alignment with affective learning (Gillies, 2016).

126
127 Slavin's (2015) approach to Cooperative Learning is driven by two key components: group goals
128 and individual accountability, whereby group rewards based on the learning of individual group
129 members are embedded within these elements. The importance of group goals and individual
130 accountability is in providing students with an incentive to help each other and to encourage each
131 other to put forth maximum effort. If students value doing well as a group, and the group can
132 succeed only by ensuring that all group members have learned the material, then group members
133 will be motivated to teach each other (Slavin, 1996). Students with special needs are safely
134 integrated in class with this framework.

135
136 Group goals are based on the individual learning of all group members, and as a result, students
137 are individually accountable for performing to achieve the group goal (Slavin, 2015). Rewarding
138 groups based on group performance (or the sum of individual performances) helps to create
139 group cohesion (Slavin, 2015). Rewarding groups extrinsically also creates an interpersonal
140 *reward structure* through which group members will give or withhold social reinforcers (i.e.
141 praise, encouragement) in response to group mates' task-related efforts. To assist teachers in
142 structuring group goals, individual accountability, and group rewards, Slavin (1991) advocated
143 Cooperative Learning structures, two of which are STAD and Jigsaw.

144 145 ***Practical Example 1 – STAD***

146
147 STAD was developed with the aim of having students work in Cooperative Learning teams to
148 learn academic content (Slavin, 1996). It consists of five major components: teams, class
149 preparation, quizzes (in PE, teachers use skills/knowledge tests), improvement score and team

150 rewards (Slavin, 1991). Table 1 describes these five components and provides examples as to
151 how a lesson might be structured within a basketball unit.

152

153

154 **Table 1. The five components of STAD (adapted from Slavin, 1991)**

Component of STAD	Example of how to implement it in practice – Basketball
<i>Teams:</i> Students are organized into heterogeneous groups of four or five members. In their groups, students are required to practice learning tasks and help each other to learn.	A class of 30 is organised into 6 groups. Each group is mixed in terms of gender, social status, ethnicity, and ability. These groups can be based on pre-unit assessment of ability and interpersonal and small group skills.
<i>Class Preparation:</i> The class and each group is presented with a group goal. The teacher can provide groups with learning tasks to help them achieve this goal and/or groups can devise their own learning tasks to help each other learn.	A Group goal is used to help each individual student improve their technique in shooting. Groups are provided with resources and equipment to manage their own learning and a designated space on the court for their group to work in.
<i>Quizzes:</i> Students within a team take individual quizzes after an initial period of practice. Students are not permitted to help one another during the quizzes. In this way, every student is individually responsible (and accountable) for knowing the material.	Each individual student performs a variety of skill/knowledge tests (e.g., lay-ups, free throws) and records his/her score. Then, the team decides how they can help each individual member improve his/her score. An additional period of practice is provided.
<i>Improvement scores:</i> The quiz is repeated after practice time has been provided. The task is for students to obtain the greatest improvement score. Groups earn points for the degree to which each individual member exceeds their initial score.	Each individual student repeats the skill/knowledge tests (e.g., lay-ups, free throws) and records his/her score. The difference between assessment 1 and assessment 2 is calculated for the improvement score. Each individual student's score is calculated within a group's improvement score (the sum of all students' improvement scores).
<i>Team recognition:</i> Groups may earn certificates or other rewards if their group's collective improvement score exceeds certain criteria or is the 'most improved group in the class'.	The teacher announces to the class the group with the greatest improvement score. This may be added to a leader board for all invasion games events within a unit based on group improvement scores.

155
 156 Reported outcomes of STAD in relation to the affective domain include positive feelings of self,
 157 such as self-esteem, positive student attitudes and motivation (Yeung, 2015). While these
 158 outcomes are internal, Krathwohl et al.'s (1964) affective taxonomy can help us explore how
 159 these types of affective learning outcomes (receiving-attending, responding, valuing, organizing,
 160 and characterization) might be observable in a Cooperative Learning classroom in comparison to
 161 traditional ways in which a class is conducted in PE.

162

163 In using STAD, students will be able to: (i) learn to value both their own and others'
164 contributions, (ii) become increasingly self-sufficient, (iii) adapt peer teaching to suit their own
165 and others' needs, and (iv) think of ability in terms of contribution and not just performance.
166 Taking basketball as an example, PE traditionally sees students recording their efforts to score
167 from different positions on the court. Success is measured in the number of baskets and the
168 development of others is not considered important. In STAD, the group is rewarded when
169 everyone improves (see table 2).

170

171 ***Practical Example 2 – Jigsaw Classroom***

172

173 The Jigsaw Classroom was developed in the early 1970s by Elliot Aronson (Aronson, Blaney,
174 Stephin, Sikes, & Snapp, 1978) in an effort to weaken the racial cliques that had emerged in
175 schools in Austin (Texas), when previously segregated African-American, Hispanic and white
176 youngsters found themselves in the same classrooms for the first time. Such interracial tension
177 was fueled by the inherently competitive nature of schools: a competitiveness that continues to
178 exist in many schools today.

179



180

181

182 In the Jigsaw Classroom (Figure 2) the class is split into small, heterogeneous groups called
 183 Home Groups, where students spend most their time. These are the groups they learn in and
 184 compete for. In each home group, however, there are experts (in Figure 2 these are labeled by
 185 letters). When these students are asked to go to their Jigsaw/Expert Groups, the home groups
 186 split. What remains are Jigsaw groups made up of *a piece* from each of the home groups. These
 187 groups then become responsible for learning a specific part or body of information. This might
 188 be a type of basketball shot (set shot, jump shot, layup, hook shoot) or a defensive strategy (full
 189 court press, half court press, zone, man-to-man). Students become experts in an area and on
 190 returning to their home groups, these expert students teach their group mates. Because Jigsaw
 191 Classroom positions students as experts, they learn about the value of knowledge (whose
 192 knowledge is important). Additionally, these experts can filter their knowledge and adapt
 193 decisions, to consider their own strengths and weaknesses. Therefore, if an expert or a group
 194 mate has a disability, activities and resources can be adapted to best suit his/her individual needs.

195 **Table 2. Affective learning outcomes in traditional teaching, STAD and Jigsaw.**

	Traditional	STAD	Jigsaw
Receiving (attending)	Students receive stimuli from the teacher on their individual performance. The focus of lessons is on personal success measured by “competency in motor skills and movement patterns... strategies and tactics... and fitness” (SHAPE America, 2016)	Students receive the group goal from the teacher (either through verbal instruction or a resource) and the first quiz that notifies an improvement. Students accept the group goal and that they must engage with a task using their peers for support.	Students receive instruction from both the teacher and their peers. Eventually, they see information from both as being valuable and seek instruction and clarification from either.
Responding	Students consider success in PE to be about how their performance compares to the performance of their peers. Performance is almost always public.	Students begin to engage in promotive interactions, accepting the views of others to decide how they can achieve the group goal. Students view their peers input as helpful to their performance.	Students look for guidance from their group and their teacher and acknowledge that they need to listen to both to succeed.
Valuing	Students learn to value a good performance in broader terms. Effort, engagement, encouragement, use of praise...outweigh movement competency	Students appear excited by their own improvement scores and praise their peers. Excitement might be observed through students organizing themselves to	Students seek feedback and instruction from their peers and they are content to work in this way as they know they will be successful. They come to value the opinions and ideas of others.

	and fitness, but success is measured by performance.	ensure they can complete the task efficiently.	
Organizing	Students organize their activities based on ability. They self-select peers with similar abilities to work with and they pick teams based on ability. Others disconnect from PE because they already 'know' that they have little to contribute.	Individuals and groups identify strategies/tasks and work as a team to help each other learn and improve. Students may modify tasks to ensure that each individual can have maximum opportunities to enhance his/her performance.	Students balance decisions and actions against a combination of criteria and work on the advice of both teachers and peers.
Characterization	Students are either engaged or disengaged in PE. They make decisions about the lesson and their physical activity experiences before the event.	Students value input from peers. They look to their peers for help first and the teacher second.	Students view the world cooperatively and make decision based on the expertise of different individuals, because they value them.

196

197 Again, Krathwohl et al.'s (1964) affective taxonomy can help us explore how these types of
 198 affective learning outcomes (receiving-attending, responding, valuing, organizing, and
 199 characterization) might be observable in a Jigsaw classroom in comparison to (i) traditional ways
 200 in which a class is conducted in PE and (ii) STAD (see Table 2). The reported outcomes of
 201 Jigsaw Classroom, in relation to the affective learning, suggests that: (i) it should be a joint
 202 priority (alongside the major psycho-motor objectives) in Cooperative Learning lessons
 203 (O'Leary, Wattison, Edwards & Bryan, 2015), and (ii) when students are aware of both their
 204 emotions and the importance of emotions they are prompted to adapt and change their behavior
 205 for the benefit of the group. Just as in STAD, Jigsaw Classroom helps students to: (i) learn to
 206 value both their own and others' contributions, (ii) become increasingly self-sufficient, (iii) adapt
 207 peer teaching to suit their own and others' needs, and (iv) think of ability in terms of contribution
 208 and not just performance. Particularly, it helps them to see that group goals, based on the
 209 individual learning of all group members, are important (Slavin, 2015).

210

211 **Conclusion**

212

213 The take-home message for physical educators is:

214 *If PE is serious in its commitment to help all students learn across all domains, teachers need to
215 be cautious in their choices of pedagogical approaches, selecting those capable of developing the
216 affective domain like SDAT and Jigsaw.

217 *PE needs instruments to value and assess affective learning to know how young people's
218 feelings and attitudes change, and Krathwohl et al.'s taxonomy (1964) can help teachers do it.

219 *Teachers need to position affective learning as a central aim of their teaching to help students
220 learn to: (i) value both their own and others' contributions, (ii) become increasingly self-
221 sufficient, (iii) adapt peer teaching to suit their own and others' needs, and (iv) think of ability in
222 terms of contribution and not just performance.

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