"I'm a Facilitator of Learning!" Understanding What Teachers and Students Do Within Student-Centered Physical Education Models

Goodyear, Victoria; Dudley, Dean

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"I'm a facilitator of learning!" Understanding what teachers do and what students do within student-centered physical education

Victoria, A. Goodyear and Dean, A. Dudley,

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1 **Abstract**
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3 The role of the facilitator has become almost synonymously associated with student-

4 centered approaches. However, how the teacher functions as a facilitator is less well

5 defined. This paper begins to define teacher action in student-centered learning

6 environments. Through an exploration of teacher behavior, teacher-student

7 interactions and, discussions around teacher-as-activators, the paper argues that the

8 teacher must play an active role in the classroom and should be considered much

9 more than the 'guide on the side'. Teachers should use a range of direct and indirect

10 behaviors and dialogical exchanges to support and extend learning. These actions and

11 interactions should be contextually relevant and conducive with the learning aims of

12 the student-centered approach. In suggesting that facilitation provides a narrow

13 perspective on teacher action, the paper calls for further consideration around teacher-

14 as-activators to consider the teacher as someone who activates new learning

15 possibilities.

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17 **Keywords:** Models-based practice, activation, teacher action, teacher behavior
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38 **Introduction**
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40   In the past twenty years or more, education has moved in a direction that

41 considers student-centered learning to be most effective (Hattie, 2012, 2009; Le Ha,

42 2014). A narrative of student-centeredness now has penetrated through educational

43 policies, national curricula, and teacher education where such approaches to learning

44 have been positioned as a 'recipe for development, success, and productive learning'

45 (Le Ha, 2014, p. 1). In physical education and sport pedagogy student-centered

46 models (Jewett, Bain, & Ennis, 1995; Haerens, Kirk, Cardon, & De Bourdeaudhuji,

47 2011; Kirk, 2013; Metzler, 2011), student-centered forms of inquiry (Enright &

48 O'Sullivan, 2010; Oliver, 2001; Oliver & Kirk, 2014), critical pedagogies (Azzarito,

49 2010; Macdonald, 2002), and peer-assisted learning approaches (Barker,

50 Quennerstedt, & Annerstedt, 2013; Ward & Lee, 2005) have all been advocated as

51 effective ways of promoting a broad range of educative and health outcomes

52 (O'Sullivan, 2013). Fundamentally, much has been written about the need for

53 teachers to move from direct instruction and adopt, develop, and transform their

54 curriculum programs through student-centered approaches (Dyson, 2014; O'Sullivan,

55 2013).

56   While interpretations of student-centeredness vary across disciplines, contexts,

57 settings, and through different conceptions of 'good pedagogy', student-centeredness

58 does not mean that students are simply left alone by teachers. Furthermore, it does not

59 mean simply collaborative or cooperative learning, it does not mean individualized

60 instruction, or that the student's interests, beliefs, and future plans dictate all (as they

61 may need to be changed) (Hattie, 2012; Jones, 2007; Le Ha, 2014). Certainly, these

62 are some of the misinterpretations of student-centered approaches that have

63   permeated through policies, national curricula, and teacher education programs

64   (Hattie, 2012; Le Ha, 2014). Instead, student-centered approaches entail developing

65   students ability to become their own teachers, and supporting them to know how to

66   evaluate knowledge claims, how to learn, how to collaborate, how to seek help, how

67   to become assessment capable, how to be resilient (particularly in the face of

68   cognitive challenges), and aiding students to know what to do when they do not know

69   what to do (Hattie, 2012; Jones, 2007).

70   Regardless of the conception of student-centeredness, the notion of 'teacher-

71   as-facilitator' has become almost synonymously associated with student-centered

72   learning (Dyson et al., 2004; Kirk & Kinchin, 2002; Le Ha, 2014). As Morrison

73   (2014, p. 1) suggested, the argument that the teacher should function as a facilitator of

74   learning and move from being the sage on the stage to the guide on the side 'is now a

75   well-worn cliché' of student-centered learning environments. Yet while pedagogical

76   approaches, strategies, methods, or models have provided teachers with 'design

77   specifications' for creating student-centered learning environments (Kirk, 2013, p.

78   979), how the teacher functions as a facilitator in practice is less well defined (Bähr &

79   Wilbowo, 2012; Wilbowo, Bähr & Groben, 2014). With most research focusing on

80   student learning outcomes or the implementation of specific features of student-

81   centered approaches, little attention has been paid to teacher behavior and teacher

82   discourse in student-centered learning environments (Bähr & Wilbowo, 2012; Casey,

83   2014; Cohen & Zach, 2012; Griffin, Brooker, & Patton, 2005; Rossi, Fry, McNeill, &

84   Tan, 2007; Wilbowo et al., 2014). Most discussions about the teacher's role have

85   merely suggested that teachers find it difficult to be less directive and more

86   facilitative and that teachers often revert to more didactic teaching methods (Bähr &

87   Wilbowo, 2012; Casey, 2014; Casey & Dyson, 2009; Cohen & Zach, 2012; Dyson,

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88   2002). As a consequence, many questions have remained unanswered about the

89   teacher-as-facilitator. For example, what does acting in more facilitative ways mean?

90   How does the teacher interact with students in paired or group work activity? What

91   does the teacher do to support learning during lessons? What effect does the teacher-

92   as-facilitator have on learning?

93   If we as an educational community are to legitimately encourage teachers to

94   adopt and develop student-centered approaches that include less direction and

95   interference from teachers, then we need to be far more understanding of the role of

96   the teacher in student-centered learning environments. Especially given that earlier

97   empirical work on minimal teacher guidance models in general education subjects

98   suggests that minimal guidance models are not particularly effective on student

99   achievement outcomes when they are based on constructivist, discovery and inquiry-

100   based teaching methods (Kirschner, Sweller & Cark, 2006). These notions are

101   particularly salient in a physical education teaching context. Without a critical

102   exploration of teacher action in a student-centered approach, there is a danger that the

103   teacher could remove themselves from the teaching and learning process and simply

104   view themselves as a 'guide on the side' to a pitch or court. Alternatively, and as we

105   have seen over a number of decades, teachers may be reluctant to use student-

106   centered approaches due to a limited understanding of how to interact with learners

107   when their role is described as merely a facilitator (Casey, 2014; Gillies, 2008; Gillies

108   & Boyle, 2010).

109   It is the intent of this paper to begin to define the physical education teacher's

110   role and prompt further debate and discussion about physical education teacher action

111   in student-centered learning environments. Similar to Hastie and Casey's (2014)

112   discussions about the need for research papers to report on how a pedagogical

113   approach was used, if we are to be confident that a student-centered environment has

114   been created then there is a need to define teacher action when student-centered

115   learning is reported on. Beyond the implementation of the 'design specification'

116   (Kirk, 2013, p. 979), we need to know how the teacher supports learning through their

117   behavior and dialogic exchanges with students. It is only then that we can determine

118   that a teaching and learning process is occurring and the teacher has not just created a

119   task and left the students to work together to learn, a common misinterpretation of

120   student-centered learning (Hattie, 2012; Le Ha, 2014).

121   In the next section we discuss teacher behavior. We draw on Muska Mosston's

122   (1966) discussions about teaching styles and critically examine how the teacher-as-

123   facilitator has been defined and perpetuated in physical education and sport pedagogy.

124   Following this, teacher interaction with learners in the role of the facilitator is

125   discussed before an alternative perspective of teacher action is offered through the

126   recent works of Hattie (2012, 2009). While the teacher-as-facilitator has been strongly

127   associated with student centered environments, Hattie has argued that the teacher has

128   a greater effect on student learning when they are an *activator*; that is, when their

129   teaching leads to a very active, direct involvement, and there is a high sense of agency

130   in the teaching and learning process. In concluding this paper we present the

131   implications for physical education surrounding teacher behavior and discourse in

132   student-centered learning environments.

133   **Teacher Behavior and the role of the facilitator**

134   Mosston's text *Teaching in Physical Education* (1966) provided one of the

135   most significant influences in understanding teaching behavior in physical education

136   (Byra, 2006; Metzler, 2011, 1983; Sicilla-Camacho & Brown, 2008). Mosston (1966)

137   proposed that teacher behavior was a result of previously made decisions by the

6

138   teacher about the design and sequence of learning activities. In this way, teacher

139   behavior was considered to align with different types of learning outcomes and

140   learning environments. However, Mosston (1966) considered that the ultimate goal

141   for teachers was to promote students having maximum control over their learning. In

142   other words, Mosston (1966) claimed that teachers had the greatest influence on

143   students' learning when they were indirect in their behavior and when a learning

144   environment was orchestrated that afforded students the opportunities to make

145   decisions about their learning.

146   To aid teachers in moving from direct to indirect teaching, Mosston (1966)

147   presented a hierarchical spectrum of eight teaching styles. The mobility across the

148   spectrum was characterized by a shift in decision making from teacher to learner. For

149   example, when students had minimal control over their learning the teacher would

150   teach by command, making all the decisions about learning in the classroom. At the

151   other end of the spectrum was problem solving. In this problem solving style the

152   teacher would not provide specific guidance and students would be encouraged to

153   think independent of teacher instruction. Specifically, in the problem solving style it

154   was considered that:

155   If we say that problem solving behavior is a way of learning by seeking a

156   solution or solutions to a recognized problem then the teaching behavior

157   (Teaching style) which is designed to promote that kind of learning <u>CAN</u>

158   <u>NOT</u> be involved in the solution. In a "pure and perfect" form of a problem-

159   solving situation the teacher <u>NEVER</u> offers a solution. The minute you do so,

160   you have stopped the process of solving which was initiated by the student.

161   The very minute your behavior intervenes with the problem solving behavior

162   of the student another style of teaching and another style of learning emerges.

163   (Mosston, 1968, p. 4, original emphasis)

164

165   While Mosston's (1966) hierarchical argument and the spectrum of teaching

166   styles has been revised in subsequent editions of *Teaching in Physical Education*

167   (Mosston, 1981; Mosston & Ashworth, 1986, 1994, 2002, 2008), his work acted to

168   clarify the dimensions of teaching behavior in relation to direct versus indirect or

169   teacher-centered versus student-centered (Byra, 2006; Metzler, 2011, 1983). Certainly

170   Mosston (1966) emphasized that when students were afforded the opportunity to

171   make decisions about their learning, the teacher would not provide guidance or

172   feedback on subject matter. The main role of the teacher was to select the subject

173   matter and provide the general conditions for learning.

174   Despite numerous criticisms of teaching styles and questions raised about

175   teaching styles as a valid and reliable means of approaching student learning

176   (Coffield, Moseley, Ecclestone, & Hall, 2004; Holt, Denney, Capps & de Vore, 2005;

177   Metzler, 1983), 'the spectrum has generated a common jargon for us to use when

178   talking about teaching' (Metzler, 1983, p.1 46). Although Mosston (1981, p. viii) later

179   considered that 'no style, by itself, is better or best' and that a range of teaching

180   behaviors should be used to promote learning (Mosston, 1981; Mosston & Ashworth,

181   1986, 1994, 2002, 2008), the oppositional argument of indirect teaching behavior is

182   somewhat dominant in the descriptions of facilitation. Whilst there may not be direct

183   alignment between teacher behavior in the problem solving style and facilitation, in

184   the descriptions of facilitation indirect teaching is associated with the creation of

185   contexts for students to engage with problem solving. Case in point, Dyson et al.

186   (2004, p. 238) review of the theoretical and pedagogical considerations for Sport

187   Education, Tactical Games, and Cooperative Learning suggest that in a student-

188   centered learning environment 'the teacher shifts from director (i.e., transmitter) to

189   the facilitator of learning activities'. As the facilitator it was considered that the

190   teacher should help students find solutions to problems but there was nothing to

191   suggest that the teacher should be deliberate in their actions to help students to, for

192   example, learn how to engage in problem solving. Specifically, it was considered that:

193   The teacher sets problems or goals, and students are given an opportunity to

194   seek solutions to these problems. Solutions to the problem are identified

195   through a questioning process and these solutions then become the focus of a

196   situated practice. The teacher also facilitates the practice by either simplifying

197   or challenging based on student abilities. In this way, the teacher is working

198   with the students' prior knowledge to develop new knowledge. The teacher

199   guides the instruction and curriculum as a facilitator of learning. (Dyson et al.,

200   2004, p. 235).

201   The work of Metzler (2011, 2005, 2000) also highlights a strong alignment

202   between facilitation and Mosston's (1966) discussions around indirect teaching

203   behavior. Similar to the spectrum of teaching styles, in the discussions around control

204   profiles for instructional models, Metzler (2011) presented a continuum to determine

205   (a) the types of interactions between teachers and students and, (b) the nature of

206   decision making and teacher/student control during lessons. The control continuum

207   moved from teacher control (sage on the stage), through to interactive (a balance

208   between teacher control and student control), and toward student control (guide on the

209   side). Within the student control profile the teacher's actions were located as being

210   that of a facilitator. Drawing on King (1992), Metzler (2011, p. 32) argued that the

211   teacher would function as a facilitator through being a 'guide on the side'.

212   The major functions involve arranging the kind of learning environment that

213   gives students some direction and a task to accomplish, then standing aside to

214   monitor while students go about their task' – thus the "guide on the side"

215   label. (Metzler, 2011, p. 32).

216   As the 'guide on the side', Metzler (2011, p. 32) explicitly suggested that the

217 teacher should only offer advice and guidance when students "get stuck" or need

218 other assistance. This type of assistance was termed a teaching moment (Metzler,

219 2011, 2005, 2000). In other words, a moment within a lesson when students reach a

220 barrier in their learning and it is necessary for the teacher to 'teach' something by

221 intervening and providing specific guidance.

222   Metzler (2011, p. 33) positioned that control, and therefore when the teacher

223 acted as a facilitator, was determined by seven key operations within each model:

224   (1) Content selection: who determines what is taught in the unit?

225   (2) Managerial control: who is mostly responsible for classroom

226   management?

227   (3) Task presentation: how do students receive task information?

228   (4) Engagement patterns: how are student engagement patterns (involving

229   space, groups, structure) determined?

230   (5) Instructional interactions: who initiates the communication during learning

231   tasks?

232   (6) Pacing: who controls the starting and stopping of practice?

233   (7) Task Progression: who decides when to change the learning tasks?

234   Of the eight models presented, seven of these models (excluding direct

235 instruction) showed that there was a balance between the seven key operations as to

236 what and when the teacher or students controlled aspects of the lesson, with some

237   operations identified as being within the interactive control profile. For example, in

238   the Peer Teaching model content selection, managerial control, and task progression

239   were placed under the teacher control profile, whereas engagement patterns and

240   pacing were placed under the student control profile. For task presentation and

241   interactional interactions, the time point of the lesson and the tasks students were

242   engaging with determined the control profile of either interactive or teacher control.

243   In this sense, although there is still a relatively oppositional argument between direct

244   and indirect teaching behavior, the Peer Teaching model is an example of how

245   Metzler positioned the teacher as someone who does not always sustain their role as

246   the "guide on the side".

247   The interactive control profile further identifies the changeable and active role

248   the teacher plays in a student-centered classroom. Specifically, and when defining

249   interactive teaching, Metzler (2011, p.32) considered that:

250   The teacher and students have approximately equal responsibility for decisions

251   and share many of the class operations. Interactive teaching also involves

252   frequent two-way communication between the teacher and students. Students

253   are encouraged to ask questions, offer suggestions, and have regular input on

254   the functioning of the lessons. The teacher will ask for, and act upon, students'

255   suggestions and ideas in class (Metzler, 2011, p. 32)

256   For six of the models presented by Metzler (2011)- Personalized System for

257   Instruction, Cooperative Learning, Peer Teaching, Inquiry Teaching, Tactical Games,

258   and Teaching Personal and Social Responsibility – interactive teaching was identified

259   within the key operation of 'instructional interactions' i.e. who initiates the

260   communication during learning tasks?. In returning to the example of Peer Teaching,

261   Metzler (2011, p. 309) suggested that, 'the teacher's communications with the tutors

262   should be highly interactive, using questions more often than direct statements to

263   develop the tutors' observation, analysis and communication skills'. Therefore, within

264   these six models Metzler (2011) made attempts to suggest that the teacher plays an

265   active role in the teaching and learning process and should be considered more than

266   the "guide on the side".

267   Despite Metzler's (2011, p. 32) positioning of interactive teaching within

268   student-centered models, the notion of the "guide on the side" and that the teacher

269   should only offer guidance or advice when students "get stuck" has continued to

270   perpetuate into the discussions about teacher behavior in student-centered models. For

271   example, Bähr and Wilbowo (2012, p. 30) have built on Metzler's discussions around

272   teaching moments to suggest that in a student-centered environment, 'the teacher only

273   becomes active when the students ask for help'. Bähr and Wilbowo (2012) positioned

274   the teacher as a facilitator of learning and suggested that there are two types of teacher

275   interventions (or reasons teachers would interact with students): invasive and

276   responsive. Invasive interventions are when the teacher interferes with group work

277   without being asked to by students. These often occur when students have stopped

278   focusing on the task or when the 'situation gets paralyzed by disputes or by the lack

279   of constructive suggestions' (Bähr & Wilbowo, 2012, p. 31). On the other hand,

280   responsive interventions involve the teacher interacting with students when the

281   teacher has been asked to offer help or assistance. In this way the 'teacher functions

282   as the expert for the respective movement task, but also as a socially competent

283   counselor who ultimately offers 'self-help assistance'' (Bähr & Wilbowo, 2012, p.

284   30).

285   The implication of teaching moments, responsive, and invasive interventions

286   are that the teacher should monitor students in their learning (Bähr & Wilbowo, 2012;

287 Metzler, 2011). The teacher needs to be able to interpret students' learning and then

288 decide if and how they should intervene in the learning process (Bähr & Wilbowo,

289 2012; Barker et al., 2013). However, Bähr and Wilbowo (2012) suggest that the

290 teacher should only interact with students when a barrier to learning or group work is

291 observed or identified by students. When a barrier is reached the teacher becomes an

292 active participant in the teaching and learning process and works with students to help

293 them understand the barriers, seek alternative solutions, and direct them to new

294 information that would help them surpass the barrier.

295   Our discussions to this point highlight that descriptions of facilitation show

296 similarity with Mosston's (1966) indirect teaching behaviors and specifically the

297 problem solving style. In the role of the facilitator, the teacher should create a

298 learning environment that promotes problem solving and then act as the "guide on the

299 side", monitoring students and providing assistance when a barrier to learning is

300 reached. While Metzler (2011) has made attempts to suggest that within student-

301 centered models the teacher plays an active and interactive role in the teaching and

302 learning process, an interactive role has been overlooked in favor of associating the

303 teacher with the "guide on the side". Indeed, interactive teaching is positioned as a

304 different type of teaching behavior and has not been associated with actions and

305 interactions of the facilitator.

306   Although it is acknowledged that limited attention has been paid to defining

307 the role of the facilitator, we argue that the discussions and descriptions of facilitation

308 represent a narrow view of teacher behavior in student-centered environments.

309 Certainly, and somewhat oppositional to the teacher's role in the classroom being

310 based on progressing and advancing learning (Capel & Whitehead, 2010; Le Ha,

311 2014; Morrison, 2002), there is little indication that in the role of the facilitator the

312 teacher would interact with students to further or enhance their learning. If an

313 environment has been successfully created that allows students to learn independent

314 of teacher instruction and the students are on task, focused, and engaged, the teacher

315 is not required in the teaching and learning process, i.e. there is not need for teacher-

316 student interaction. The implications of such definitions of teacher behavior are

317 dampening for the teaching profession. If the teacher is only seen as someone who

318 responds to students if and when there is a barrier to learning (and the students sees

319 the same), we might ask, is the teacher needed in the learning environment? Could an

320 unqualified teacher or teaching assistant fulfill this role?

321   To further consider the role of the facilitator in student-centered environments

322 the following section explores how the teacher interacts with learners in the role of

323 the facilitator. Through our discussions of teacher-student interaction, we show how

324 the teacher-as-facilitator might be considered as more than the 'guide on the side'.

325 **Teacher Interactions with learners in the role of the facilitator**

326   Questions have been positioned as the basic interactional strategy of

327 facilitation (Bähr & Wilbowo, 2012; Casey et al. 2009; Dyson et al., 2004). Indeed,

328 reciprocal communications have been used to frame how teachers interact with

329 students to support their learning in paired or group work activity (Bähr & Wilbowo,

330 2012; Ward & Lee, 2005). As a consequence, teachers interactions with students are

331 framed by a questioning and answering process whereby the teacher uses both open

332 and closed questions to assist students in completing learning tasks (Bähr &

333 Wilbowo, 2012; Gillies, 2008; Gillies & Haynes, 2011; Gillies & Kahn, 2008). The

334 fundamental aim of questioning is to engage students in critical thinking, prompt

335 students to interact with one another to solve problems, and to develop students'

336 understandings to a point where they can complete the tasks without teacher

337 assistance (Gillies, 2008; Bähr & Wilbowo, 2012; Gillies & Haynes, 2011; Gillies &

338 Kahn, 2008; Wilbowo et al., 2014).

339   In their work exploring teacher action, Bähr and Wilbowo (2012) positioned

340 the reciprocal communications between teachers and students as a Socratic

341 conversation. Drawing on the work of Heckmann (1993), a Socratic conversation

342 involves the teacher asking a series of questions to steer a conversation with regard to

343 a learning problem. Central to the Socratic conversation is that instead of providing

344 answers to students' questions, the teacher 'keeps returning questions by the students

345 to them, but in a different form' (Bähr & Wilbowo, 2012, p. 37). In this way, the

346 questions the teacher asks of students are based on students' emerging understandings

347 of the subject matter where the teacher re-phrases the students' questions to help

348 students find a solution to the problem.

349   In their later work exploring teacher-student interactions, Wilbowo et al.

350 (2014) identified two processes that guide the types of interactions teachers can have

351 with learners: diagnosis and intervention. Diagnosis involves the teacher making

352 judgments about students learning with the intent of then providing appropriate

353 interventions. In contrast to Bähr and Wilbowo (2012) and Metzler's (2011, 2005,

354 2000) arguments that the teacher only interacts with learners when a barrier to

355 learning is identified, Wilbowo et al. (2014) suggest that to be able to make

356 judgments about if, how, and when to intervene the teacher needs to interact with

357 students. Consequently, diagnosis involves the teacher asking questions to students to

358 verify his/her interpretations of learning. For example, 'is it correct that you assume

359 (....)' (Wilbowo et al., 2014, p. 17). In addition to questioning, the teacher may

360 explain the learning task to students, describe his/her interpretation of how the

361 students are completing the task, and ask students to complete a different form of the

362   initial task. These diagnostic interactions, Wilbowo et al. (2014) claimed, enable the

363   teacher to understand students' learning and determine if they need to intervene in the

364   learning process.

365   The second process identified by Wilbowo et al. (2014), intervention, is

366   guided by three intervention principles. The first principle is strongly linked to the

367   diagnostic process and emphasizes that any teacher intervention should be contingent

368   with students' current knowledge, skills, and understandings of the task or subject

369   matter. The second principle involves fading, a consideration of how and when the

370   teacher takes control and then transfers responsibility back to the students. Wilbowo

371   et al. (2014) report that an intervention can include a range of teacher actions and

372   behaviors that move from teacher control to student control. For example, the teacher

373   may pause the learning activities and ask students to demonstrate movements, ask

374   students to explain their understandings, or ask students to analyze each other's

375   performances. The teacher may also verify students' understandings by offering

376   feedback, praising students' efforts, providing specific guidance, and re-emphasizing

377   key aspects of the task. The third intervention principle involves checking students'

378   understandings. In this phase the teacher doesn't simply ask students if they

379   understand, where the response would most likely be yes. Instead 'the teacher should

380   ask questions that elicit answers which show the understandings of the issue'

381   (Wilbowo et al., 2014, p. 18). For example, students can be asked to identify or

382   demonstrate key points related to the learning task. If students understand and are able

383   to complete the task, the students can then regain full control of their learning and the

384   teacher may leave the pair or group to continue completing the task independent of

385   teacher assistance. However, if a barrier to learning still exists the teacher may

386   continue to intervene in the learning process.

387   While questioning has been considered as the main interactional process (Bähr

388   & Wilbowo, 2012; Casey et al. 2009; Dyson et al., 2004), it is clear from Wilbowo et

389   al. (2014) that the teacher interacts with learners in a variety of ways to support

390   learning. In the role of the facilitator, the teacher engages in a series of dialogical

391   exchanges that include questions, explanations, feedback, praise, and the presentation

392   of different tasks to students. The aim of teacher-student interaction is to assist

393   students' learning, support group work, and to eventually enable students to have

394   control over their learning. Thus, Wilbowo et al. (2014) suggested, the dialogical

395   exchanges need to involve a range of interactions and behaviors that are underpinned

396   by both student control and teacher control.

397   In general educational subjects, a teacher's interactions with students in the

398   role of the facilitator are also considered to involve much more than questioning

399   (Gillies, 2008; Gillies & Haynes, 2011; Gillies & Kahn, 2008). Drawing on Hertz-

400   Lazarowitz and Shachar (1990), Gillies (2008) argued that teacher discourse can be

401   categorized as, (a) encouraging students' initiatives, (b) helping students with their

402   learning, (c) facilitating communication among students, (d) providing feedback on

403   task performance, and (e) praising individual student efforts. Fundamentally, while

404   the centrality of the teacher is reduced, Gillies (2008) argued that teachers should

405   interact with learners in a variety of ways and use more pro-social and positive verbal

406   behaviors to support learning.

407   Building on these understandings of teacher-student interaction, in their

408   empirical examination of teacher discourse, Gillies (2008, 2006), Gillies and Haynes

409   (2011), and Gillies and Khan (2011) have all separately reported that in the role of the

410   facilitator teachers use open and closed questions and more mediated behaviors.

411   Mediated behaviors were defined as a type of interaction that provided a scaffold for

412   students' learning (Gillies, 2006, 2008; Gillies & Haynes, 2011; Gillies & Khan,

413   2011). These mediated behaviors could include prompts, specific guidance, tentative

414   suggestions, the validation of efforts, the refocusing students attention on the task, and

415   the encouragement of students to listen each other's suggestions (Gillies, 2006, 2008;

416   Gillies & Haynes, 2011; Gillies & Khan, 2011). Although the specific student

417   learning outcomes that resulted from student-teacher interaction were not reported on,

418   it was considered that teachers' questions and mediated behaviors prompted students

419   to mirror these types of interactions when they communicated with their peers

420   (Gillies, 2006, 2008; Gillies & Haynes, 2011; Gillies & Khan, 2011). Consequently,

421   teacher-student interaction was considered as a strategy to scaffold learning by

422   providing assistance and through the teacher modeling appropriate interactional

423   behaviors that students could then use with their peers to support their learning

424   (Gillies, 2006, 2008; Gillies & Haynes, 2011; Gillies & Khan, 2011).

425   This section has shown that when the teacher functions in the role of the

426   facilitator their role is much more than the 'guide on the side'. Certainly the teacher

427   plays an active as well as inactive role in the teaching and learning process, engaging

428   in numerous dialogical exchanges with students to scaffold, extend, and enhance their

429   learning. Fundamentally, although indirect behaviors have been associated with

430   facilitation the teacher uses a range of indirect and direct teaching behaviors.

431   Moreover, the dialogical exchanges between teachers and students involve much

432   more than questioning. Feedback, guidance, praise, and summarizing students

433   learning are all examples of teacher-student discourse when the teacher functions as a

434   facilitator of learning. Thus, with an emerging understanding that the teacher plays an

435   active role in the teaching and learning process, our discussions now focus on the

436   need to consider what students *do* in their learning and, subsequently, Hattie's (2012,

437   2009) discussions on the teacher as an activator of learning.

438   **Teacher as Activator**

439   The early research of Mosston (1966) considered that the ultimate goal for

440   teachers was simply to promote students having maximum control over their learning.

441   This and student-centeredness, from purely 'constructivist' notions of education, led

442   to the current permeations of teacher-as-facilitator in physical education practice

443   (Barker et al., 2013; Dyson et al., 2004). In others words, it is what students *control*

444   that matters. Unfortunately, the amount of control that students exercise over their

445   own learning is not particularly effective as a means in its own right. Whilst student

446   control over learning has been reported to heighten students' motivation for learning,

447   these are usually instructionally irrelevant and any improvements in motivation do not

448   necessarily materialize into learning gains (Patall, Cooper, & Robinson, 2008).

449   Therefore, the message pertaining to being a teacher-as-facilitator should no longer be

450   solely based on what student's *control*. The major message is what teachers and

451   students *do* matters. Focusing on what teachers and students *do* rather than what they

452   can control was argued by Biggs as early as 1979 (Biggs, 1979), but has been

453   synthesized recently in Biggs (2012). He contends that the most effective approaches

454   to education are concerned with what teachers *do,* followed by the more important

455   outcome variable of what students *do.*

456   Biggs's (2012, 1979) argument that we need to focus on what teachers *do* is

457   consistent with Hattie's (2009) recent suggestions that the greatest sources of variance

458   in educational outcomes are attributed to students where schools can exercise greater

459   accountability to the second highest source of variance which is attributed to teachers.

460   In other words, teachers' actions and their interactions with students have the greatest

461 influence over learning in the school environment. For this reason, the notion of a

462 teacher operating in a guiding only capacity is inherently flawed. From Hattie's

463 (2009) perspective, any approach that promotes student-centeredness and learning

464 must recognize such variance and exercise some significant agency over the teacher's

465 capacity to enhance, strengthen, and develop students' learning.

466   Hattie (2012) developed this point to further suggest that teachers who had the

467 greatest impact on their students learning were those who could organize and use

468 content effectively. While knowledge and content is inevitably influenced by context

469 and therefore beliefs and regulations (Armour, 2011), when teachers integrate new

470 knowledge with students' prior knowledge and their own teaching goals, teaching had

471 the greatest levels of effect on student achievement. In this sense, content is presented

472 to and organized around an understanding of their students' needs, with the teacher

473 holding a degree of agency over what and how to teach. In contrast, teachers who are

474 least effective were described as being 'anchored in the details of the classroom'

475 (Hattie, 2012, p. 29). These teachers consider content, organization, management, and

476 their behavior first and without interrelating these to their students needs. Thus, in

477 Hattie's (2012) view, teachers who have the greatest influence on their students'

478 learning are able to draw understandings about what to *do* and how to introduce new

479 content from an evidence-informed position about what their students know and can

480 *do*.

481   In a further empirical quest for explanation about teacher action, Hattie (2009)

482 argued that the traditional notions of teacher-as-facilitator need to change because the

483 greatest effects on student learning that we have some control occurs when teachers

484 become learners about the impact of their own teaching and when students become

485 their own teachers. This shift makes the widely held clichés 'guide on the side' and

486 the 'sage on the stage' both false dichotomies in terms of envisaging an effective

487 teaching and learning approach (in any discipline). It forces a reconceptualization of

488 student-centered physical education models to ensure that 'teaching moments'

489 described by Metzler (2011) and Bähr and Wilbowo (2012) occur through a process

490 of diagnosis, intervention, and evaluation of teacher impact.

491   The process of diagnosis, intervention and evaluation of what students *do* has

492 been discussed in the literature as clinical teaching (Dinham, 2013). This model of

493 teaching is still very much student centered but it also recognizes that the primary

494 agent of change in a student's learning is their teacher (Dinham, 2013). Hattie (2009)

495 refers to these teachers who adopt more clinical approaches to teaching as being

496 activators of learning. Models of teaching that described the teacher-as-activator have

497 larger effects on learning because these teachers utilize active and guided instruction.

498 In the role of the activator, teacher action involves reciprocal teaching, feedback,

499 mastery learning, teaching students self-verbalization, meta-cognition strategies,

500 direct instruction, goal setting, and behavioral organizers. As shown by Hattie (2009),

501 in his meta-analysis of over 800 studies, activation is much more effective than

502 typical facilitative instruction that requires less teacher activity and is more unguided

503 in practice. However, it is important to acknowledge that that facilitation was viewed

504 as involving inquiry based teaching, individualized instruction, problem-based

505 learning, and inductive teaching. The claims made that activation was more effective

506 were made against this interpretation of facilitation.

507   In contrast to the traditional descriptions of teacher action through the notion

508 of facilitation, Hattie's (2012, 2009) discussions around the teacher-as-activators

509 acknowledges the active role of the teacher in the teaching and learning process.

510 Activation certainly suggests that the teacher should consider their role as, not being

511   on the side, but of one that activates new learning possibilities and the achievement of

512   new learning outcomes. Yet in order to do this, and extending the views offered by

513   Wilbowo et al. (2014), the teacher needs to continually evaluate the impact of their

514   behavior and their dialogical exchanges with students. In a physical education

515   context, Dudley (In Press) calls what students *do* the 'legitimate and observable

516   manifestations of learning'. In other words, what are the behaviors a student is likely

517   to enact once learning has occurred that a teacher can respond to with a legitimate

518   teaching intervention to progress learning further. In this way, student-centeredness

519   and teacher action moves beyond determining what students and teacher control in

520   their lesson toward a consideration of what students *do* and how the teacher is

521   responsive to their students' manifestations of learning.

522   **Discussion**

523   In recognizing that there has been limited debate and discussion around

524   defining the role of the teacher-as-facilitator in physical education, one of our aims of

525   this paper was to begin to define teacher action and behavior in student-centered

526   learning environments. Our discussions have identified the strides made to inform

527   teacher behavior within student-centered models. However, and as we identified at the

528   beginning of this paper, without a further and critical examination of teacher behavior

529   there is a danger that the teacher could remove themselves from the teaching and

530   learning process and simply view themselves as a 'guide on the side' to a pitch or

531   court. Moreover, and similar to Hastie and Casey's (2014) discussions around fidelity,

532   if we are to be confident that a student-centered approach has been used there is a

533   need to describe teacher action and how learning has been supported.

534   While we acknowledge that any definition cannot be legitimized until it has

535   been examined 'in-action' or through a critical exploration of the behaviors and

536   dialogical exchanges that have been reported on, we offer a tentative definition that

537   serves to guide teacher action in student-centered learning environments. Such

538   definition has been drawn from the discussions inherent within this paper that

539   highlight the interdependency between the teacher and the student in the student-

540   centered classroom. It also acknowledges the emergent and evidence-informed

541   discussions of Hattie (2009) and the teacher-as-activator, beginning to argue that the

542   teacher is much more than the 'guide on the side'.

543   *Teacher Action in student-centered classrooms:* Teachers play an active role

544   in the teaching and learning process. They create a learning environment that

545   promotes students' learning with their peers. During learning tasks teachers

546   interact with students, not only when students reach a barrier in their learning,

547   but to interpret, understand, support, and develop the learning that is taking

548   place. As a consequence, teachers need to constantly diagnose what is

549   occurring, have multiple interactional strategies (that include direct and

550   indirect behaviors), and evaluate the impact of these actions on student

551   learning.

552   From this definition we argue that teachers need to take into account several

553   pedagogical considerations surrounding their actions within student-centered

554   approaches. These include: (a) *diagnosing*, (b), *responding* and, (c) *evaluation*.

555   (a) *Diagnosing*: In order to determine the content, how content should be

556   presented/organized, and to understand the degree of interaction required

557   by the teacher, there needs to be a process of observation, and active

558   interaction with students. The teacher can question students to validate

559   their interpretations of student learning and then make a judgment if they

560   will interact with students to support, or challenge their current phase of

561   learning. *Diagnosing* is underpinned by a focus on what students *do*.

562   (b) *Responding*: Responding involves supporting students or groups in a way

563   that allows them to progress in their learning. The actions of the teacher

564   can be direct or indirect and can include questions (open and closed),

565   explanations, feedback, praise, demonstrations, presentations of the task in

566   a different form, the encouragement of student initiatives, the promotion of

567   communication between students, or no interactional behavior at all (for

568   example, when further attempts at the task independent of teacher input

569   are perceived by the teacher to support and extend learning). The type of

570   interaction is based upon teachers' knowledge of the students, their

571   understanding of the situation, and how students are progressing in their

572   learning. In this way, teacher action and interaction behaviors cannot be

573   pre-defined and may vary from student-to-student or group-to-group.

574   However, the type of response should be both contextually relevant and

575   conducive to the overarching aims of student-centered learning, i.e.

576   developing students ability to become their own teachers, supporting them

577   to know how to evaluate knowledge claims, how to learn, how to

578   collaborate, how to seek help, how to become assessment capable, how to

579   be resilient (particularly in the face of cognitive challenges), and aiding

580   students to know what to do when they do not know what to do (Hattie,

581   2009; Le Ha, 2014).

582   (c) *Evaluation*: Teachers should know the impact of their interaction with

583   students as a means to determine if students' learning has progressed, has

584   the capacity to progress further without teacher-student interaction, or if

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585   students require support in their learning. In order for this to achieve the

586   teacher may, (a) question students on their understanding or performance

587   in the task or, (b) observe students' performance of the task. Subsequently,

588   the teacher may return to the actions and interactional behaviors within

589   *responding*, or allow students to move onto a different task, or 'activate' a

590   more challenging task.

591   While these pedagogical recommendations are not too dissimilar to what

592 might be conceived as 'good pedagogy', these teacher actions and student-teacher

593 interactions have been somewhat lost within the interpretations of facilitation in

594 student-centered learning approaches. Through the notion of the 'guide on the side',

595 the active role of the teacher in the teaching and learning process has been replaced by

596 an understanding that the teacher will be 'standing aside to monitor' (Metzler, 2011,

597 p. 32). Certainly, the false dichotomy of 'sage on the stage' vs 'guide on the side' has

598 perpetuated within general education and physical education.

599   While we have offered a definition of teacher action and we have sought to

600 provide pedagogical recommendations for interaction and behavior, in order to

601 legitimately understand the teacher's role in the student-centered classroom we now

602 need to critically examine teacher behavior and teacher interactions with learners in

603 student-centered approaches. Such an investigation would entail a critical exploration

604 of student-centered models (Jewett et al., 1995; Haerens et al., 2011; Kirk, 2013;

605 Metzler, 2011, 2005, 2000), student-centered forms of inquiry (Enright & O'Sullivan,

606 2010; Oliver, 2001; Oliver & Kirk, 2014), critical pedagogies (Azzarito, 2010;

607 Macdonald, 2002), and peer-assisted learning approaches (Barker et al., 2013; Ward

608 & Lee, 2005). Importantly, this would allow our definition to be contextualized with

609 what students and teachers *do,* and perhaps, allow for an understanding as to how the

610 teacher impacts learning in student-centered approaches.

611 **Conclusion**

612 The wealth of advocacy for student-centered learning highlights that education

613 is being pushed in a direction that considers student-centered learning to be most

614 effective. However, despite the explicit and extensive moves toward student-

615 centeredness and the development of pedagogical 'design specifications' in physical

616 education (Kirk, 2013, p. 979) that support the implementation of student-centered

617 approaches, little discussion has emerged about the role of the teacher in student-

618 centered approaches. Instead there seems to be a semantic confusion about teacher

619 action and how the teacher functions in a student-centered classroom. With most

620 research merely stating that the teacher should facilitate learning and with the 'guide

621 on the side' used as a way of explaining facilitation, this paper begins to move

622 research and practice forward by defining teacher action in student-centered

623 classrooms. Certainly this paper has argued that the 'guide on the side' provides a

624 narrow interpretation of teacher action and actually obstructs what the teacher can *do*

625 and the impact they can have on students learning. Indeed, there is a need to think

626 much more openly about what the teacher can *do* and what students can *do* in the

627 student-centered classroom, a perspective that moves beyond a consideration as to

628 what is controlled.

629 In order to promote learning, whilst supporting and extending students'

630 abilities to complete learning tasks, we argue that the teachers need to play an active

631 role in the learning process. The false dichotomies of 'guide on the side' and 'sage on

632 the stage' are not helpful in defining optimal teaching practice. Drawing on Hattie's

633 (2012, 2009) term, we argue that the teacher might be best placed as an activator.

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634   Through this lens, the teacher activates new learning possibilities by using a range of

635   direct and indirect instructional behaviors to support and enhance students' learning.

636   However, a further consideration of activation is required in physical education before

637   a judgment is made as to whether the teacher functioning as an activator is more

638   effective.

639   **Authors Note and Acknowledgements**

640   Position of authorship was determined by mutual agreement that the author

641   who had the most followers on social media site Twitter at the time of submission

642   would be determined to be the lead and corresponding author. Whilst there is no

643   empirical precedent for this decision, it adds to the methodology considerations for

644   collegial authorship.

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801   We would like to thank the reviewer for the helpful comments in refining this paper.
802   In the table below we have identified how we have responded to each of the
803   comments and within the text we have identified any changes with red text.
804

Review Comment	Response
The purpose of this manuscript with to discuss current conceptualizations of teacher facilitation within student-centered models of instruction and how these may be implemented differently. The basic thesis of the paper is valid in that it moves discussion forward regarding the role of the teacher within student-centered instruction. Little empirical evidence exists on effective facilitative teaching strategies within these models and the author(s) bring some good insights from general education to potentially reframe these strategies. The paper is generally well evidenced and provides a logical journey through current conceptualizations of practice, to move to a new thesis of action based upon the premise of teacher-as-activator within these models of instruction. That stated, some of the arguments made are overzealous in making casing points for more expansive pedagogies within student-centered models of instruction. This is particularly true for the symbolic representation of current pedagogies in this approach as being in the far extreme of Mosston's problem solving style. The author(s) also pay superficial attention to current conceptualizations of interactive teaching approaches and the body of knowledge	Thank you for the positive comments regarding the paper. In addressing the specific comments below we have endeavoured to address each of these. However, throughout the paper we have attempted to 'tone down' our arguments and pay attention to the broader literature and author's perspectives in which this paper is concerned with.

that currently exists which has examined the triadic relationship between teacher, student and content within student-centered models of instruction. That stated, the manuscript seems to provide a valuable addition to contemporary discourse related to instruction within these types of models. The following comments hopefully serve to provoke thoughts on revisions but are not necessarily to be viewed as critiques that diminish the quality of the paper.	
Title: I am struggling to connect this title with the journey of the paper…what evidence-based practice is presented in the paper? Although cryptic titles are somewhat vogue I suggest a simpler statement to relate to the idea of the development of more effective teaching pedagogies within student-centered models of instruction	The title has been changed to: "I am a facilitator of learning" Understanding what teachers do and students to within student-centred physical education models
P 3 What is meant by task teaching, please elaborate on this phrase.	In acknowledging that task teaching may have been misleading this statement has been changed to direct instruction – page 3 line 54
P5 Insert "are" after "when"	This has been changed on page 5

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P8 I am not convinced of this argument. Shifting towards facilitation during models based-instruction does not infer that the teacher behavior was highly aligned with Mosston's "problem solving" style. The quote highlights questioning and task intervention which would not be apparent within style H.	We have acknowledged this point by including a statement on page 8 lines Whilst there may not be direct alignment between teacher behavior in the problem solving style and facilitation, in the descriptions of facilitation indirect teaching is associated with the creation of contexts for students to engage with problem solving Preceding this statement is an additional comment to highlight how Mosston's styles have created a common way of talking about teaching behaviour: Page 8 …'the spectrum has generated a common jargon for us to use when talking about teaching' (Metzler, 1983, p.1 46).
The author(s) need to be more cautious as Metzler also frames indirect teaching within student-centered models as sometimes interactive. This seems an overzealous characterization that oversimplifies current narratives on teaching behavior within these types of models of instruction. That is not to say that the general argument of the paper is not true, rather that the authors need to be more cautionary in their classification of current teacher practice as being one of just a questioner on the side of student learning. This overzealous characterization again manifests on p12 where we are privy to the author(s) extrapolation of the roll out the ball teacher during student-centered models of instruction. These statements marginalize strides made within teaching practice within these models and in my opinion, should be deleted.	We have sought to expand on the discussions around direct, indirect and interactive teaching by Metzler. Pages 10-12 provides additional discussions about the nature of interactive teaching and how teaching behaviour or what teachers/students control is defined. Indeed, we have made an explicit attempt to highlight how Metzler, while his work may have been interpreted as the guide on the side, has made attempts to position the teacher as interactive within student centred models. In concluding this section to the paper we have also re-emphasised Metzler's notion of interactive teaching and the attempts made to position the teacher as more than the guide on the side (Page 13). We have also removed the references to the roll out the ball approach within the paper

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P15 I like this point on dialogic exchanges as being critical to teacher actions in this role.	Thank you
P19 This latter point of what students do could be embellished further. What are the author(s) interpretation of student control vs what students do? The author(s) also fail to acknowledge the other critical variable within the triadic representation of learning within these contextualized practices…and that is the content embedded in the learning tasks. Didactics would suggest that this is the most salient variable and the driving force behind these activation pedagogies. Some acknowledgement of this variable within contextualized learning is required. Some acknowledgement is also required of the work that has already been conducted using this lens of inquiry which has begun to shed light on the teaching pedagogies required within student-centered models of instruction to facilitate student learning.	We have attempted to further clarify these points about what students control and do. This is firstly in the additional paragraph on page 20 and then we make explicit statements on page 22: In a physical education context, Dudley (In Press) calls what students *do* the 'legitimate and observable manifestations of learning'. In other words, what are the behaviors a student is likely to enact once learning has occurred that a teacher can respond to with a legitimate teaching intervention to progress learning further. In this way, student-centeredness and teacher action moves beyond determining what students and teacher control in their lesson toward a consideration of what students *do* and how the teacher is responsive to their students' manifestations of learning. Moreover, we have now acknowledged content within our discussions of the pedagogical considerations for teacher actions. On page 23 we have included this into diagnosing: *Diagnosing*: In order to determine the content, how content should be presented/organized, and to understand the degree of interaction required….. In reference to acknowledging content the additional paragraph on page 20 has sought to acknowledge this variable and consider it from Hattie's perceptive Hattie (2012) developed this point to further suggest that teachers who had the greatest impact on their students learning were those who could organize and use content effectively. While knowledge and content is inevitably influenced by

	context and therefore beliefs and regulations (Armour, 2011), when teachers integrate new knowledge with students' prior knowledge and their own teaching goals, teaching had the greatest levels of effect on student achievement. In this sense, content is presented to and organized around an understanding of their students' needs, with the teacher holding a degree of agency over what and how to teach. In contrast, teachers who are least effective were described as being 'anchored in the details of the classroom' (Hattie, 2012, p. 29). These teachers consider content, organization, management, and their behavior first and without interrelating these to their students needs. Thus, in Hattie's (2012) view, teachers who have the greatest influence on their students' learning are able to draw understandings about what to *do* and how to introduce new content from an evidence-informed position about what their students know and can *do*.

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