The complexity, tensions and struggles in developing learning communities throughout a sport education season

1 **The complexity, tensions and struggles in developing learning communities throughout**

2 **a Sport Education season**

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43

44   **Abstract**

45   Several studies demonstrate that Sport Education (SE) supports the development of an

46   authentic sport experience. However, the 'messiness' attached to the reality of effectively

47   enacting SE is less prominent in the literature. The aim of this study is therefore to capture

48   the complexity, tensions and struggles (for both lecturers and undergraduate students) of

49   delivering and experiencing an authentic Artistic Gymnastics SE season within learning

50   communities. Action research framed this 13-week study. Participants included 33

51   undergraduate students, four lecturers (one familiar with SE and three familiar with Artistic

52   Gymnastics) at a university in Brazil and a professor with expertise in teaching and

53   researching SE who was contacted regularly throughout the SE season. Data was collected

54   weekly and included: (a) weekly collaborative lecture group meetings after each class; (b)

55   student reflective diaries; (c) lead lecturer weekly observations collected as field notes; (d)

56   Facebook posts; and (e) student focus groups. Data analysis involved inductive and constant

57 comparison. Results conveyed: (a) the relationship of trust and interdependence between the

58 lecturers who implemented SE; (b) how students created a safe environment that allowed

59 them to overcome fear; and (c) how lecturers and students negotiated the different levels of

60 students' engagement during the season and the associated feeling of frustration. Lecturers

61 and students developed into two separate communities of learners. Future studies should

62 continue to examine the effectiveness of a community of learners within the SE context and

63 specifically encourage lecturers and students to work together as one learning community,

64 learning from, and with, each other.

67

68 **Introduction**

69 Whenever we start talking about the competition [Sport Education season] I have

70 contradictory feelings. I think it is really cool the idea of the competition: thinking

71 about what it takes to roll out an Artistic Gymnastics competition that involves the

72 whole class. However I'm scared to death! I can do almost anything I want to do and I

73 do not want to damage my team (the most wonderful and caring team in the world!).

74 I'm afraid of feeling more ashamed, not being able to decide a routine for me… I'm

75 anxious, I'm excited, I want to see it happen, I want to make it happen with everyone:

76 my team and the whole class! As I have said, I have contradictory feelings! Please do

77 not be scared if I get a weird face next class (now you know what's up!). I think over

78 time I will let it go, and with the rules and the code of points [scoring booklet] that we

79 will define together in the next class, things will be clearer and I will overcome this

80 stupid fear! (Student diary - lesson 4)

3

81 Embedded within the above undergraduate student diary entry are the complexity, tensions

82 and struggles of the environment in which this project took place. Several studies

83 demonstrate that Sport Education (SE) is capable of providing an authentic and educationally

84 rich sport experience (Araújo et al., 2015; Brock and Hastie, 2017; Hastie, 2012; Hastie et al.,

85 2011, 2017). However, the complexity, tensions and struggles of effectively enacting SE are

86 discussed less prominently in the literature. We believe there are new opportunities for

87 understanding learning within SE by engaging with the notion of learning communities (Lave

88 and Wenger, 1991; Wenger, 1998; Wenger and Wenger-Trayner, 2015), and revealing the

89 messy area in action research (Cook, 2009).

90   Messy is a vital element for changing in action research. It is the interface between the

91 known and the nearly known, between knowledge in use and tacit knowledge. The purpose of

92 entering this 'messy area' is to enable and allow new directions to emerge for educators and

93 researchers. This means space for imaginative freedom and new ideas, with a view to

94 understanding, more fully, the reality of striving to effectively enact SE. According to Cook

95 (2009), mess and rigour might appear to be strange bedfellows in action research. However,

96 the author argues that 'the purpose of mess is to facilitate a turn towards new constructions of

97 knowing that lead to transformation in practice' (277).

98   Discussion of the messiness of effectively enacting SE is less prominent in the

99 literature. The aim of this study is therefore to capture the complexity, tensions and struggles

100 (for both lecturers and students) of delivering and experiencing an authentic SE season within

101 learning communities. In the next section we introduce situated learning theory and present

102 Legitimate Peripheral Participation (LPP) as a central characteristic of this theory.

103

104 *Situated learning, legitimate peripheral participation and learning communities*

Situated learning focuses on learning as 'an integral and inseparable aspect of social practice' (Lave and Wenger, 1991: 31). Lave and Wenger (1991) draw attention to the point that learners inevitably participate in learning communities and that the mastery of knowledge and skills requires newcomers to move toward full participation in the sociocultural practices of a community. In that sense, 'learning implies becoming able to be involved in new activities, to perform new tasks and functions, to master new understandings' (Lave and Wenger, 1991: 53).

`   Legitimate Peripheral Participation (LPP) is a central defining characteristic of situated learning theory (Wenger and Wenger-Trayner, 2015; Wenger et al., 2002). It is an analytical viewpoint on learning, a way of understanding learning. LPP provides a way to speak about the relation 'between newcomers and old-timers, and about activities, identities, artifacts and communities of knowledge and practice' (Lave and Wenger, 1991: 29). LPP is a conceptual bridge about the production of changing persons and changing communities (Lave and Wenger, 1991). *Legitimacy* of participation is a characteristic of a way of belonging, not only a crucial condition for learning but a constitutive element of its content. *Peripherality* means that there are multiple, varied, more-or-less-engaged and inclusive ways of being located in the field of participation defined by a community. *Participation* is about being located in the social world. In that sense, changing location and perspectives are part of actors' learning trajectories, developing identities and forms of membership.

In using situated learning as a theoretical framework to examine learning within SE, Kirk and MacDonald (1998), Kirk and Kinchin (2003) and Tannehill et al. (2015) argued that SE provides an authentic sport experience by reproducing contemporary learning communities that are in line with community based sport (aligned with legitimacy, peripherality and participation). The key features of SE are central practices of community sport and, therefore, provide learners with replicable experiences. SE promotes, through the

130   feature of affiliation, learners adopting different roles in sport, for example, a coach,

131   journalist or record keeper (Siedentop, 1994). These roles allow learners to authentically

132   participate in a learning community, through encouraging them to occupy a unique identity

133   where their contributions are regarded as important for other members (Kirk and Kinchin,

134   2003; Kirk and MacDonald, 1998; Tannehill et al., 2015).

135   SE encourages teachers and students to establish and maintain a physical education

136   learning community through promoting boundaries, persistence, common goals, cooperation

137   and symbols and rituals (Tannehill et al., 2013). The six key features of SE (seasons,

138   affiliation, competition, a culminating event, record keeping and festivity) (Siedentop, 1994)

139   lend themselves to supporting learning communities (Kirk and Kinchin, 2003; Kirk and

140   MacDonald, 1998; Tannehill et al., 2015). Tannehill et al. (2015) describe in what way SE

141   addresses each of the six characteristic of learning communities. 'Seasons' and 'affiliation'

142   extend the length of time that students work together as a team, becoming micro-communities

143   if they persist over time. 'Culminating event' and 'record keeping' allow the teams to convey

144   what they have learned throughout the season, working towards a common goal and

145   enhancing cooperation. 'Competition' and 'festivity' encourage students to make many of the

146   decisions that determine the structure and operation of the season. They encourage the

147   development of teams into learning communities where students identify with a team name

148   and colours, create boundaries as regards differentiating between members and non-members

149   and develop significant rituals.

150   Although there are studies that describe the potential of situated learning as a

151   theoretical framework to examine learning in SE (Kirk and Kinchin, 2003; Kirk and

152   MacDonald, 1998; Tannehill et al., 2015), there is a lack of empirical evidence in this area

153   that enables us to be fully informed on how best to encourage and achieve authentic

154   engagement within learning communities. In addition to this, is a level of 'messiness'

6

155 expected to be captured though exploring complexity, tensions and struggles.

156   Through the discussions on situated learning and LPP, we have conveyed that SE

157 provides an authentic experience of sport through reproducing learning communities in

158 community-based sport. In this study, by gaining insight into students' and lecturers' learning

159 trajectories, the intention is to identify challenging experiences that arise through a

160 developmental progression towards the achievement of specific goals. The purpose of this

161 paper is to capture the complexity, tensions and struggles (for both lecturers and students) of

162 delivering and experiencing an authentic SE season within learning communities.

163

164 **Methodology**

165 This study was an action research project that is based upon a spiral of activity that includes

166 planning the research, conducting the research, observing outcomes and reflecting on

167 outcomes to inform a new turn through the activity spiral (Kemmis, 2006). We adopted

168 action research to capture the complexity, tensions and struggles (for both lecturers and

169 students) through students engaging in meaningful learning.

170

171 *Context and participants*

172   The participants included 33 undergraduate students (nine women and twenty-four

173 men) in the third year of a Bachelor of Sport degree at a public university in Brazil. The

174 mission of this university is to provide high quality education and produce innovative

175 knowledge in the area of sport in an interdisciplinary and applied way, ensuring a connection

176 with social issues. The purpose of this degree is to educate undergraduate students to become

177 coaches, with a specific focus to: (a) work in promoting and delivering sporting activities at

178 various levels and across different types of organizations; (b) manage sports, recognizing the

179 physical potential and limit of the human body; (c) provide resources to apply sport for

180   individual and social development contexts. In the specific course reported in this study there

181   is no formalized coursework related to SE or other pedagogical models.

182   The students were aged between 20 and 39 years old and had no previous experience

183   with SE or Artistic Gymnastics (AG) on the programme. Participants were enrolled in an AG

184   60-hour class over a four-month period. The AG course is a theoretical and practical course

185   that aims for students to learn skills and the fundamentals of AG, the pedagogical processes

186   to teach AG, safety issues, and the discussion of interdisciplinary themes that can be explored

187   through AG. The class met once a week for three hours.

188   Four lecturers (one familiar with SE and three familiar with AG) also participated.

189   Carla (female), first author, had ten years of experience teaching content courses (such as

190   sport pedagogy, sport sociology and team sports) to students. She had significant experience

191   with SE, both in terms of planning and teaching a number of seasons. She had no previous

192   experience with AG. Carla invited Pri (second author), Diego (third author) and Michele

193   (fourth author) to be part of this study. Pri (female) was a PhD student with seven years of

194   experience teaching gymnastics content courses to students. She also had seven years of

195   experience coaching AG and as a national AG judge. Pri had no previous experience with SE.

196   Diego (male) was a national Rhythmic Gymnastics judge with 14 years of experience

197   coaching AG and Rhythmic Gymnastics. Diego had no previous experience with SE. Michele

198   (female) had five years of experience teaching gymnastics content courses to students and no

199   previous experience with SE. Ann (female and fifth author), a professor with expertise in

200   teaching SE, was contacted regularly throughout the SE season for advice on how to progress

201   through the ongoing season. She had 15 years of experience as a physical education teacher

202   educator and has conducted research in teaching and learning experiences aligned with SE.

203   Ethical approval was provided by the university ethics committee. Students and

204   lecturers provided informed consent for their participation in the study.

205   *Sport Education*

206   The implementation of SE included the six key features: seasons, affiliation, formal

207   competition, a culminating event, record keeping and festivity (Siedentop, 1994). Table 1

208   describes these features and how they were implemented in this study.

209   [Insert Table 1]

210   The SE season lasted for 13 weeks with one three-hour session delivered each week. The

211   students took part in a SE unit in AG taught by the lecturers. The lecturers planned all classes

212   together in weekly lecturer group meetings. The student groups selected six peer coaches who

213   then collectively devised six mixed ability teams. Three teams had six students and three

214   teams had five students (total of 33 students). In addition to the role of player, students were

215   required to agree and select peers in their respective teams to undertake the role of coach,

216   manager, journalist, judge, or choreographer. In the case of the teams with five students, the

217   coach also undertook the role of the choreographer. Students had only one additional role to

218   that of player. Throughout the season (weeks 9-12) the students performed in a qualification

219   round, all-round finals and apparatus finals (including floor exercise, balance beam and

220   vault). During the post-season phase (week 13), all students performed in team finals. The

221   students also organized an event to award medals for the most improved player, best

222   organizational rules, and other significant achievements throughout the season.

223   The coaches were responsible for planning the training sessions and creating routines.

224   The managers took care of team administrative duties such as organizing the equipment for

225   team practices and informing all team members of when and where the competition would

226   take place. The judges were responsible for teaching the rules to teammates and upholding

227   rules during the competition. The journalists were responsible for collecting information

228   about their team and updating their team's portfolio on Facebook (Kinchin, 2001; Luguetti et

229   al., 2017). The choreographers were responsible for helping the coaches to create routines,

230   and specifically artistry compositions.

231   *Data gathering*

232   Data collection was weekly over a four month period.

233   (a) *Weekly collaborative lecturer group meetings after each class session*. The

234   structure of the meetings created an environment for lecturers to engage in conversations

235   about their experiences using the SE model through AG and to seek advice from each other

236   on how to proceed or negotiate challenges that emerged. Having these meetings after each

237   class session created opportunities for flexibility, spontaneity, and responsiveness in different

238   situations, allowing participants to share challenges and enablers arising during teaching

239   sessions. All lecturers group meetings were audio recorded and transcribed (total of 205

240   pages).

241   (b) *Student reflective diaries.* The students completed diary entries every week for 13

242   weeks. A total of 225 student reflective diary entries were completed during the period of the

243   study. Diary entries were based around five writing cues that align with the concepts of

244   legitimacy, peripherality and participation. Table 2 describes these diary entries.

245

246   [Insert Table 2]

247

248   (c) *Lead lecturer weekly observations through field notes.* The lead lecturer wrote

249   field notes/observations of each class (total of 24 pages) about the reflection of challenges

250   and enablers arising during teaching sessions and such data informed the weekly lecturer

251   group meeting discussions.

252   (d) *Facebook posts.* Student journalists were responsible for collecting information

253   about their team and updating their team's portfolio on Facebook as part of the class. The

254   lecturers and the other students also participated on Facebook. Twenty-two status updates,

255   514 likes, and 77 comments were noted on the Facebook page. This data was exported to

256   Microsoft Excel using the Facebook export application.

257   (e) *Student focus groups.* Two 20-minute focus groups were conducted with each of

258   the six teams (seven weeks into the 13-week unit and at the end of the unit). The focus groups

259   followed a semi-structured interview protocol format and were conducted by the first author.

260   The focus groups were based on the concepts of legitimacy, peripherality and participation

261   (Table 2). The focus groups were digitally recorded for verbatim transcription (total of 77

262   pages). We did not report the focus group data in the results section because the students'

263   reflective diaries better capture the complexity, tensions and struggles the students' faced.

264   However, the focus group data was used to code the data and for the construction of themes.

265

266   *Data analysis*

267   Data analysis involved four steps and was approached through an inductive lens

268   (Lincoln and Guba, 1985). Firstly, Carla, Pri, Diego and Michele read all data sets separately

269   and engaged in the process of coding aimed at capturing the complexity, tensions and

270   struggles of delivering and experiencing an authentic SE season within learning communities.

271   Through this inductive approach, statements and ideas were developed as data was read and

272   re-read. After the data were coded, Carla, Pri, Diego and Michele discussed the codes they

273   had identified in relation to the research question. Examples of codes by each lecturer were

274   shared, and then questioned and critiqued by the other lecturers. This enabled the lecturers to

275   share commonalities and differences. The third process of analysis involved constant

276   comparison. Data were grouped and placed into categories and moved backwards and

277 forwards until an agreement was reached. The fourth and final process of analysis involved

278 the critical friend. Ann engaged in a process of checking the interpretations. She added

279 credibility to the analysis by challenging the interpretations of the coded data and the

280 construction of themes. In this phase, data was moved between different themes until a level

281 of agreement was reached. In order to better describe the complexity, tensions and struggles

282 of delivering and experiencing an authentic SE season within learning communities, we

283 decided to present vignettes that describe students' and lecturers' learning trajectories that

284 incorporate the codes that emerged in the data analysis process. Pseudonyms are used

285 throughout to refer to the students. For the presentation of results, direct quotes have been

286 translated into English.

287 **Results**

288 We use vignettes to foreground what occurred during the implementation of the SE

289 season. In the first vignette we describe the relationship of trust and interdependence between

290 the lecturers. In the second vignette we convey how students created a safe environment that

291 allowed them to overcome fear. The third vignette describes how lecturers and students

292 negotiated the different levels of students' engagement during the season and the associated

293 feeling of frustration. Finally, the fourth vignette highlights how lecturers and students

294 evolved to form two communities of learners.

295

296 *Vignette 1: 'Artistic Gymnastics is complex, but we're all together': trust and*

297 *interdependence between lecturers*

298 This vignette describes the relationship of trust and interdependence between the

299 lecturers. From the beginning of the project, the lecturers conveyed trust towards each other

300 and interdependence with each other due to the challenges that emerged. The weekly

301 collaborative lecturer group meeting after each class session was the space where the

302 lecturers negotiated challenges such as the co-creation of the code of points and the lecturers'

303 view about the competition.

304   The first challenge was to co-create a competition that would engage students. In

305 order to do that, the lecturers brainstormed ideas of how to teach the complex code of points.

306 According to the International Gymnastics Federation (FIG), the purpose of the code of

307 points is to: (a) provide an objective means of evaluating gymnastics exercises; (b)

308 standardize the judging of FIG official competitions; (c) assure the identification of the best

309 gymnast in any competition; (d) guide coaches and gymnasts in the composition of

310 competition exercises; (e) provide information about the source of other technical

311 information and regulations frequently needed at competitions by judges, coaches, and

312 gymnasts (FIG, 2016). The official code of points was created to provide the judges, coaches

313 and gymnasts with a document that would guide them to the development of high level

314 competitions.

315   In order to engage the students in meaningful learning, the lecturers decided to co-

316 create a code of points with the students. The lecturers had to negotiate different points of

317 view to create a teaching strategy for co-creating the code of points, and a relationship of

318 trust and interdependence emerged as a way to negotiate that challenge. After the third

319 lesson, the lecturers discussed how to most effectively teach a code of points:

320   Pri: This is an official code of points

321   Carla: Wow, that's crazy! This will be very difficult for our students to understand and

322   of course for me to understand it!

323   Pri: But with the drawing activity this will get easier. I'm going to use a drawing

324   competition for the students to understand the Artistic Gymnastics competition.

325   Firstly, we will define the theme of the drawing and establish the criteria and values

326   for the difficulties of drawing. For the execution note, we have established a chart of

327   draw-chart-related faults, which would be reduced from 10 points according to the

328   error level (dash with slight variations in the line would have discounted one-tenth,

329   for example). At the end of the competition, we relate the dynamics to Artistic

330   Gymnastics competition (e.g. scoring and code of points). I assure you that it will

331   work!

332   Carla: I am not sure it will work because Artistic Gymnastics is complex, but we're all

333   together! Oh, another thing I was going to tell you, I'm going to stay outside of Brazil

334   for the next two weeks and whatever you decide on that time, I am with you...

335   whatever you decide you have my support for sure

336   (lecturer group meeting - lesson 3).

337   Through the drawing activity, Pri and Diego co-created a code of points with the

338 students. This code was a rulebook that defined the scoring system for the competition. The

339 students were involved in all decisions in co-creating this code.

340   Carla asked the students to compile the routines based on the code of points they had

341 created in the previous class with Pri and Diego. While the students were working on the task

342 of creating the routines, several doubts began to arise that Carla could not answer in that

343 class:

344   Several questions emerged during the class and I could not help my students. I was

345   not prepared to be alone in this class and I don't understand the code of points they

346   co-created with Pri and Diego. Oh My God, Artistic Gymnastics is a crazy sport and I

347   am afraid it is not going to work! The students had a code of points and they asked

348   questions that I could not answer last class. Firstly, I need to understand this code of

349   points. In this class I was thinking all the time 'If I were a judge, the competition

350   would not happen'

351   (Carla, field notes - lesson 5).

352   In addition to the questions regarding the code of points, the students asked about the

353   height of the beam. The students wanted to use the lower beam and Carla recognized that

354   they were afraid of the official balance beam height. In relation to the vault, the students did

355   not know which difficulty they could perform. Gisele, one of the students, tried a forward

356   handspring in this class and some of her peers imitated her. Carla was very concerned about

357   safety during this class. The students also had doubts about artistry composition. One of the

358   boys performed an unusual movement and asked Carla, 'Can this be considered an artistry

359   composition?' Carla did not know how to respond. Carla did not know about the

360   'requirements' or about the 'connections'. It was clear that Carla needed help from Pri and

361   Diego:

362   In today's class we practiced for the competition. Our team had no music and we

363   didn´t know exactly what to do. Diego and Pri weren't here to help us and Carla alone

364   could not meet our needs and we became 'orphans'. When Diego gave us the copy

365   with the official code of points in the last class, I was thinking about the work of a

366   judge who must understand all these rules very well. What hard work – a lot of

367   training and dedication!

368   (João, diary - lesson 5)

369   In the following days, Carla contacted Diego and Pri by email, WhatsApp, phone and

370   Skype several times. All three lecturers revisited the code of points together and agreed on

371   possible answers to the students' questions. At the beginning of the next class, the three

372   lecturers worked with the students in considering the most appropriate responses to the

373   questions they had posed previously regarding the code of points.

A second challenge that emerged related to the lecturers views about competition. In the beginning of the project, Diego and Pri did not believe that a competition could be used for an educational purpose. The relationship of trust and interdependence between the lecturers that emerged in the weekly collaborative lecturer group meetings were essential to overcome this challenge. In a similar way to Diego and Pri educating Carla about AG, Carla educated Diego and Pri about SE. Diego and Pri had no previous experience in SE and were particularly challenged by the role of competition in SE. Such an example occurred when Pri realized that competition could be used for an educational purpose:

Pri: I'm getting more and more delighted with the model. I believe now they [students] can enjoy a competition of gymnastics!

Diego: Yeah.

Carla: Felipe said: 'Today I understood why the gymnasts wear shorts'.

Diego: I am so happy he learned that.

Carla: He said it is because he, as judge, could not see the knee of the gymnast that was wearing pants.

Pri: Yeah. That is so cool.

Diego: I told Felipe that even when the gymnast wears pants, his/her pants have to be tight to his/her body.

Pri: That's why I'm telling you how SE is cool. If they do not live the competition, there is no use of ten thousand lectures; they will not know what it means. If they do not live, they're going to say 'Wow, gymnastics is very difficult, right?'. What I think is making more sense to me is thinking about gymnastics as a sport and competition is something very strong in sport. This model is giving me several ideas to teach gymnastics in the future (lecturer group meeting - lesson 8)

398   What was clear in this vignette was the relationship of trust and interdependence in a

399   learning community between the lecturers who implemented SE and AG. Although Carla had

400   no previous experience with AG, and Pri and Diego had no previous experience of SE, they

401   were patient and respectful of each other's experience.

402

403   *Vignette 2: ´Learning to trust our peers has been so cool and important to me': the*

404   *community support to overcome fear*

405   This vignette highlights how students created a safe environment that allowed them to

406   overcome fear. In the first six classes, the students described in their reflective diaries the fear

407   of competing in AG:

408   I was uncomfortable in this class. I felt uncomfortable in performing the movements

409   in front of my peers, uncomfortable for not feeling confident in performing the

410   movements, uncomfortable for perhaps getting out of my comfort zone. I think this

411   class challenges me to think, to critique, to reflect, contributing to my personal growth

412   (Beatriz, diary – lesson 2).

413   Although all lecturers strived to organize a fair and co-constructed competition with students,

414   the fear of exposing themselves in front of the whole class remained strong for the students.

415   The coaches and peers helped create a safe environment that allowed the students to

416   overcome their fear:

417   I confess I'm a little scared of the lessons. My experience is in team sports. I always

418   ran away from gymnastics classes. To improve my training I decided to enrol in this

419   class and face my fears. My friends have helped me a lot in class, especially Gisele,

420   our coach. Gisele is the most experienced in our team and she has taken care of

421   everyone in the group (Antônio, diary – lesson 1).

422   In this class I realized the different reactions within my own group. Some were afraid

423   or ashamed and did not even try some exercises because of the difficulty. Others, even

424   in fear, were motivated and wanted to try. As a coach of my group I was thinking a lot

425   about it, in the tenuous line that exists between the challenge that motivates and the

426   challenge that discourages and harms. Finding this limit is my challenge!

427   (Ivana, diary – lesson 2)

428   The peer coaches were essential in negotiating students' fears in the first two classes.

429   The coaches described how they felt responsible for their team. However, relationships of

430   interdependence among other members of the team began to be created from the third lesson.

431   An example of this was the relationship between Maiara (a choreographer) and Beatriz (a

432   journalist):

433   I found this class very interesting because we helped each other. Beatriz always

434   helped me with my gigantic limitations, and I helped her with her fear. It was really

435   cool for example when she managed to make the handstand almost without my help

436   and how happy she was with it, since she was afraid even of 'turning upside down'. I

437   think I have already reported this in the previous diary: learning to trust our peers has

438   been so cool and important to me (Maiara, diary - lesson 3).

439   Doing the activities with Maiara is very good for me because she supports me, helps

440   me, and besides, she inspires me by her willpower to overcome her limitations, fears

441   and insecurity. Although she does not help me too much technically, she inspires me -

442   a life lesson (Beatriz, diary - lesson 3).

443   Students began to trust their teammates and described how they began to overcome

444   their fear. They improved their body awareness and help from peers was described as the

445   reason for this. Regardless, two students quit the competition as gymnasts because they did

446   not feel comfortable to compete and chose to take on important organizational roles with

447   great commitment:

448   I did not feel comfortable with the situation of exposing myself as a gymnast. I think I

449   made the right choice. However, from the outside, it is clear that we planned a well-

450   organized and structured competition and that I did not harm my team by not

451   performing as a gymnast. I am working a lot as manager. I believe I was not the only

452   gymnast to be uncomfortable with the situation, but I made the decision not to

453   compete. A decision that seemed to have been widely respected by you [lecturers].

454   Thank you lecturers for this! (Mauro, diary - lesson 9)

455   In this vignette we described how students created a safe environment that allowed

456   them to overcome fear. At the beginning of the season, the safe environment evolved between

457   coaches and gymnasts. As the season progressed all organizational roles started to be

458   involved and students helped each other. The few students who quit the competition as

459   gymnasts were engaged in the competition.

460

461   *Vignette 3: 'Expectation versus reality': negotiating the different levels of engagement*

462   This vignette refers to how lecturers and students negotiated the different levels of

463   students' engagement during the season. From the beginning of the season, students

464   described the process of negotiating different levels of participation:

465   In today's class the journalists came together to talk and it was amazing because while

466   Carla explained what she wanted, a thousand and one ideas were popping up in my

467   mind. However, curiously, when the other five journalists began to speak, my

468   excitement went downhill. They wanted to do the easiest thing, the least effort. In that

469   sense, my ideas for Facebook posts were unanimously rejected - expectation versus

470   reality! (Beatriz, diary - lesson 3)

471   One of the last groups to go through my station was the one that gave me more work.

472   The students could not concentrate and were joking. I called the attention of the

473   group, which for me is always discouraging. At the end of the class I mentioned the

474   lack of concentration of some classmates and said that this limits the quality of our

475   class. I did not say names, but a classmate took offense and we ended up arguing

476   (Gisele, diary - lesson 2).

477 While some teams and students were fully involved, other students were not so committed.

478 These differing levels of engagement were evident to the lecturers from lesson four:

479   Pri: We gave them [students] time to practice the routines and they asked us: 'practice

480   what?' We said: 'practice for the apparatus you will perform (floor exercise, balance

481   beam and vault)'. Most students found this interesting, but some of them just left the

482   class. The idea was to stimulate their sense of responsibility for practicing. It was very

483   clear to us that the team that Gisele coached was very much performing as a team.

484   Diego: Gisele puts herself in the coach's role.

485   Pri: Her team was a team! Other teams also practiced the routines, like Ivana's team,

486   but quickly dispersed (lecturer group meeting - lesson 4).

487   The classes were designed to be democratic, co-constructed and subsequently expect a

488 level of student responsibility. Responsibility and autonomy were required in organizational

489 functions and in gymnast performances. At the start of the season, the students did not

490 understand what would happen in the class and the importance of being responsible and

491 autonomous:

492   Carla: I think the managers are not committed and I believe it will be a challenge.

493   Today I talked to Julia individually and told her, 'Julia, we need you'. I believe that if

494   we have Julia on our side, we'll be able to bring in the other managers.

495   Diego: The day I talked to the managers, I said: 'You're responsible for everything;

496   you need to think about the apparatus, the judge, and others'.

497   Carla: They need to decide where the gymnasts are going to warm up! And all this I

498   think should already be ready.

499   Diego: I do not think they organized all these expectations

500   (lecturer group meeting - lesson 7).

501   In the beginning of the season, the students understood the importance of their

502   participation. The students understood that the organization roles were essential to run the

503   competition:

504   The competition really happened!!! My participation as a gymnast was innocuous ha

505   ha ha. In the beginning I was more productive... organizing my colleagues' hair, face

506   and our mascot (so cute) ha ha ha. But in the competition itself, since I'm not a good

507   gymnast, I was just performing. However, I was looking for incredible pictures and

508   several ideas for publishing on Facebook (Beatriz, diary - lesson 9).

509   Yesterday I was talking to Beatriz about her role as a journalist, and how the other

510   journalists were not so committed. We figured we would not care about that. Our

511   team will have a journalist and a social media person! We are going to post every

512   week. It's going to be a little bit of work, but I hope this will motivate the students to

513   use Facebook a little more. If it does not work, we do not really care, because we're

514   having a great time with all this, and we are getting together!

515   (Maiara, diary - lesson 6)

516   Today I realized that my involvement was very important. I am a judge and so I had a

517   crucial role in making the competition follow the schedule without delays. I think this

518   lesson was the culmination of my protagonism as a student and I felt very motivated.

519   It is nice to point out that because of this protagonism and my connection with the

520   activity and my colleagues, the class time went superfast. I could take classes like this

521   every day and I would not get tired (Victor, diary - lesson 9).

522   Managers, journalists, coaches, judges and choreographers realized that they had a

523 crucial role in the competition element. However, the different levels of students'

524 engagement during the season had to be continually negotiated. While the more involved

525 students seemed unmoved about students with less engagement, lecturers were frustrated at

526 their meetings about the low participation of some students. In the culminating event, three of

527 the six teams competed with all members of the team as gymnasts. In the three remaining

528 teams, a few students were missing on the day as they were not comfortable to compete as a

529 gymnast.

530

531 *Vignette 4: 'I'm afraid of what we did. Diego as judge disempowered our students': dividing*

532 *our communities of learners*

533   This vignette highlights how lecturers and students evolved to form two communities

534 of learners. After lesson 11, the lecturers were describing the challenges that emerged in the

535 lesson and how they disempowered their students:

536   Carla: In your opinion what was the main challenge in today's class?

537   Diego: I think it was the judges! One of the judges said to me 'Your scores were very

538   strict' and I said, 'No, I have scored according to your code of points'.

539   Carla: We put you in as judge because you are an official national judge, but we

540   started to realize that your scores were very strict. So, you wrote 'no, no, no' on the

541   scoresheet to the managers not considered the scores of the other judges.

542   Diego: I know... Pedro was so upset and said to me: 'So we judges are not good for

543   anything?' Then I said, 'No, your scores served all these days, but today is a final'.

544   Carla: I'm afraid of what we did… If the idea of this model is to empower them to

545   perform the organizational rules, I think Pedro's reaction is making us to think that we

546   made a huge mistake. I think today we have disempowered our students,

547   unfortunately! I do not think we should have done that. We should at least consider an

548   average of the scores.

549   Diego: I agree! I did not know what to say to the students in this moment

550   (lecturer group meeting- lesson 11).

551

552 At the end of the lesson, Carla and Diego were talking about the mistake that they made.

553 Although the lecturers had intended to contribute to a fair competition, they realized that they

554 had made a mistake. Diego and Carla felt that they were disrupting the competition that was

555 co-created by the students. Many students stayed at the end of the class arguing with Diego

556 and Carla that the peer judges' scores should be considered:

557   I do not know if I should give my opinion, but I think it would be important to think

558   for the next time. Diego did not participate in the previous scoring, and then it ended

559   that yesterday his scores were the only ones considered in our competition, which I

560   did not find correct, because it takes away the importance of the judges who were

561   responsible since the beginning of the competition (Beatriz, diary - lesson 11)

562   The co-creation of the code of points and the co-organization of the entire competition

563 with students may have contributed to the students becoming a community. This incident

564 highlighted that lecturers and students were not one community of learners. The lecturers

565 understood that the students became autonomous in organizing the competition and became a

566 community of students. The lecturers decided to not participate as judges in the culminating

567 event. They observed the competition and the students made decisions in the competition

568 without consulting the lecturers.

569

Discussion

The aim of this study was to capture the complexity, tensions and struggles lecturers and

students faced delivering and experiencing an authentic SE season within learning

communities. In this section, we discuss: (a) the complexity of teaching AG through SE; (b)

the tensions and struggles between lecturers, between students, and between both groups; and

(c) future directions.

The Complexity and Teaching AG though SE

We observed the complexity of teaching AG through SE. SE literature tends to focus

on studies of team sports (Araújo et al., 2015; Braga and Liversedge, 2017; Brock and Hastie,

2017; Hastie et al., 2017; Hordvik et al., 2017) with significantly less literature on individual

sports such as athletics (Pereira et al., 2015) and CrossFit (Ward et al., 2017). There is a lack

of studies that discuss the challenges of teaching acrobatic sports (e.g. gymnastics,

synchronized swimming, trampoline). For this type of sport, the most important factor is the

quality of the movement. The complexity of teaching AG through SE was evident in the

extensive pre-season presented in this study (8 weeks). This complexity focused primarily on

how we modified the activities so most students could learn and be successful. Lecturers and

students collectively agreed on choosing to focus on floor exercise, balance beam and vault.

Students commented that they believed they would be more successful at these than the other

apparatus choices.   Lecturers and students also co-created a code of points and the dynamic

of competition in such a complex process was evident through the shared negotiation

between lecturers and students. The training of the judges was another challenge in the

complexity of teaching AG through SE. It took an extensive pre-season to prepare the two

judges: 'D-score' that evaluates the content of the exercise and 'E-score' that evaluates the

594   performance and artistry of the routine. It was a complex process that demanded time, given

595   the difficulty of preparing the two judges. Finally, while the lecturers motivated the students

596   to compete, they did not force them to do so. The lecturers were cognisant of the level of fear

597   that some students had to negotiate in performing in front of their peers. It is important to

598   note that besides the extension of the pre-season, an important factor to negotiate the

599   complexities of teaching AG was the lecturers' significant amount of experience in

600   gymnastics. Pri and Diego had more than seven years of experience coaching AG and as

601   national AG judges.

602   Even though studies have not discussed challenges of teaching individual sports using

603   SE, others have examined challenges related to the SE model. For example, Braga and

604   Liversedge (2017) examined undergraduate students' perceptions of the challenges associated

605   with the implementation of SE. Findings indicated that students consistently reported the

606   complexity of spending time and energy on planning, establishing fair teams, and assessing

607   student learning. Although the authors described the challenges regarding the process of the

608   implementation of a SE season, there is a need for studies to discuss the complexity, tensions

609   and struggles of experiencing SE.

610

611   *Tensions and struggles between lecturers, between students, and between both groups*

612   The process of delivering SE in an AG context revealed tensions and struggles

613   between lecturers, between students, and between both groups. For lecturers, mutual trust,

614   respect and support were key enablers in a complex process of delivering an authentic SE

615   season within a learning community. Although Carla had no previous experience with AG,

616   and Pri and Diego had no previous experience of SE, they were patient and respectful of each

617   other's experience. Carla trusted Pri and Diego in relation to the development of the code of

618   points and the drawing activity. In the same way, Pri and Diego trusted Carla regarding the

619   educational purpose of the competition element. In the weekly meetings and informal

620   conversations (e.g. email, WhatsApp, phone and Skype), the lecturers shared challenges they

621   faced and negotiated their fear in relation to learning new content (SE and/or AG). Mutual

622   trust, respect and support were essential because learning is supported by conversation and

623   stories about problematic and especially difficult cases (Lave and Wenger, 1991; Patton and

624   Parker, 2017; Wenger, 1998). By sharing the challenges, the lecturers gained confidence in

625   themselves and recognised the quality of the work they were doing with the students. The

626   lecturers developed a learning community nurtured with mutual trust, respect and support,

627   essential to negotiate challenges that emerged – a key characteristic for professional learning

628   communities (Bolam et al., 2005; Fletcher and Bullock, 2012; Parker et al., 2010; Patton et

629   al., 2013; Tannehill and MacPhail, 2017; Yoon and Armour, 2017).

630   In terms of students' engagement and participation, different levels in relation to SE

631   and AG learning were observed. While some teams and students were fully involved as

632   gymnasts or in organizational roles, other students were not so committed in these learning

633   processes. The lecturers were frustrated at their meetings about the low participation of some

634   students, especially with respect to being involved as gymnasts. According to situated

635   learning theory, initially, people have to join communities and learn at the periphery (Lave

636   and Wenger, 1991; Wenger and Wenger-Trayner, 2015; Wenger et al., 2002). As they

637   become more competent they become more involved in the main processes of the particular

638   community. They move from legitimate peripheral participation to full participation. In the

639   present study, the students moved toward full participation in relation to SE and AG learning.

640   At the start of the season, most of the students understood the importance of their

641   participation in the organization roles. However, in the culminating event, three of the six

642   teams competed with all members of the team as gymnasts – some of the students were not

643 comfortable to compete as gymnasts and decided to contribute solely in the organizational

644 roles. The students who did not compete as gymnasts performed essential roles for the

645 development of the competition (e.g. the two most effective students in terms of organizing

646 the competition did not compete as gymnasts). Therefore, performing organizational roles

647 and not competing as a gymnast allowed students remain engaged in an important role for the

648 group, changing their location in the learning community, as described by Kirk and

649 MacDonald (1998), Kirk and Kinchin (2003) and Tannehill et al. (2015).

650   Lecturers and students developed into two separate communities of learners. The

651 students became autonomous in organizing the competition and became a community of

652 students. In creating communities of learners, the authors describe the challenges that arise in

653 the relationship between master and apprentices (Lave and Wenger, 1991; Wenger and

654 Wenger-Trayner, 2015; Wenger et al., 2002). Accordingly, there is very little observable

655 teaching and the most basic phenomenon is learning. The practice of the community created a

656 potential 'curriculum' that which may be learned by newcomers with legitimate peripheral

657 access. It seems typical that apprentices learn mostly in relation with other apprentices. In the

658 present study, the students did not sufficiently engage with the lecturers to encourage one

659 community. For example, few students participated in the closed Facebook page created for

660 the lecturers and the students to share information about the season. The lecturers

661 endeavoured to show the students that the teaching and learning process should be an 'open

662 classroom'. Rogoff, Turkanis and Bartlett (2002: 7) describe how children and adults learning

663 by participating within a community of learners seek school improvement in an 'open

664 classroom':

665   Adults are responsible for guiding the overall process and for supporting children's

666   changing participation in their shared endeavors. Adults provide leadership and

667   encourage children's leadership as well, and they learn from the activities in which

668   they engage with the children. This perspective thus eliminates the dichotomy of

669   adult-controlled learning versus children-controlled learning; it substitutes a quite

670   different arrangement in which children and adult are partners rather than adversaries.

671   While the lecturers attempted to create an open classroom, the students were

672 previously never exposed to that or taught how to engage in this type of class environment.

673 One of the students shared at the end of the study, 'this way that you [lecturers] taught this

674 class was never experienced before in our course. At the beginning we thought you were

675 crazy teaching in this way because most lecturers tell us what to do' (Pedro). The lecturers

676 did not discuss with the students the traditional student-teacher power relationship and the

677 importance of considering students and lecturers as partners rather than adversaries. The fact

678 that Diego disempowered the students by undertaking the role of a judge created a conflict

679 between the lecturers and the students that was not resolved until the culminating event where

680 the students took sole decision-making responsibilities. The relation among the members of

681 the community (students and lecturers in our case) is multifaceted; the relationship is not only

682 focused on getting the task done but also involves relating to each other as people and

683 attempting to resolve inevitable conflicts in ways that maintain relationships (Rogoff et al.,

684 2001).

685

686 *Future directions*

687   Based on the limited amount of research on communities of learners in SE and

688 findings from this study, future studies should continue to examine the effectiveness of a

689 community of learners within the SE context and specifically encourage lecturers and

690 students to work together as one learning community, learning from, and with, each other.

691 Our recommendations would be to continue with the same group of students, mapping

692 learning trajectories in the following years and considering the influence of time in the

693 process of becoming one community. A second SE season with the same group would allow

694 the students to experience and understand that lecturers and students can, and should, operate

695 as one learning community, engaging in the process of constructing an open classroom.

696 Another possibility would be to combine SE with critical and/or cultural pedagogical models

697 (e.g. cultural studies or activist approaches) as a way in which to instructively explore the

698 traditional student-teacher power relationship. In this way, lecturers and students could

699 identify, critique and transform these historically constructed power relations through

700 engaging collectively as one learning community. We believe that this study provides

701 direction to readers interested in conducting action research and SE, recognizing messy as

702 part of the research and legitimizing the positive role it plays in creating depth and rigour

703 research process.

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789

790   Table 1: Description of the key features of SE and how they were introduced in each lesson

Key Features	How achieved in each lesson
Seasons - sport is undertaken in seasons. A season implies a longer time period that includes a practice period, a pre-season, a regular season and a post-season with a culminating event.	Three seasons took place across 13-week unit: 8 weeks in pre-season, 4 weeks in regular season and 1 week in post-season/culminating event.
Affiliation - students remain members of the same team for the entire season. Affiliation is defined as the development of feelings of identity, the sense of belonging to a team, and the growth of social skills.	The students were organized in 6 teams (China, Refugee, Japa-Spain, Jamaica, Hogwarts and Madagascar), choosing their own team and names and remaining in the same team for the entire season.
Formal competition – students make many of the decisions that determine the structure and operation of the season. A formal schedule of competition allows each team and its participants to make short-term decisions for the season.	The students were encouraged to undertake an additional role to that of participant: coach, manager, journalist, judge, or choreographer. During the season, the teams performed in qualifications, all-round finals and apparatus finals (floor exercise, balance beam and vault). In the post-season all teams performed in team finals.
Culminating event - the season ends with a culminating event. This event should be festive and allow all students to participate.	On the final day (Festival day), the students performed in team finals. Medals were awarded to all students. The students also organized an event to award medals for most improved player, best organizational rules, and other achievements.
Record keeping - there is extensive record keeping. Game statistics can be used by coaches and participants to analyze their own team strengths and those of their opponents	Each team had two judges: D-score (or Difficulty score) that evaluates the content of the exercise and E-score (or Execution score) that evaluates the performance and artistry of the routine. They recorded team and individual statistical performances during the competition.
Festivity - sporting events are known for being festive. Teams have names that become part of their tradition and add to the lore of the sport. In that sense, lecturers need to find ways to help students learn to celebrate their participation in sport activities by creating a festive atmosphere	The students were encouraged to discuss and agree a team name, color and slogan. All materials produced were posted and commented in a closed Facebook page.

791

792

793   Table 2: Description of the diary entries that align with the concepts of legitimacy,

794   peripherality and participation

LPP concepts	Diary entries
Legitimacy	1. At what points in the lesson did you feel your involvement mattered to your team? What roles and responsibilities did you experience in the lesson?
Peripherality	2. What activities in this lesson resulted in you feeling more involved as part of the Artistic Gymnastics Sport Education lesson?
Participation	3. What instances/experiences led to some people being more involved than others in the lesson? Did you still feel you were contributing to the lesson? 4. What instances resulted in you having to negotiate possible decisions with your peers? Did people have differing beliefs on what to do in the lesson? 5. What routines and ways of doing things are common practices in the lesson?

795