

1 **Physical education teachers' reality and experience from teaching**
2 **during a pandemic**

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23 **Abstract**

24 Most physical education (PE) research pertaining to COVID-19 has focused on the
25 (negative) implications and difficulties PE teachers face during this pandemic period. In
26 fact, despite informed calls for reform and radical change in PE, little attention has been
27 paid to the (potentially positive) implications for teachers' pedagogical practices and,
28 more importantly, for the future of PE. Drawing on a social constructivism theoretical
29 perspective, this paper explores the reality from several PE teachers' perspectives and
30 reflects on the type of PE that the global pandemic conditioned. We approached this
31 analysis informed by Lawson's (2009) and Quennerstedt's (2019) calls for the PE
32 community to (re)act and drive PE to its twenty-first century version. Using methods
33 associated with a process-oriented methodology, this study adopted a cross-sectional
34 qualitative design, and 12 PE teachers with diverse backgrounds and teaching
35 experiences participated. We conducted a series of semi-structured interviews that
36 began with the following question: 'How can the experience of blended or online PE
37 contribute to the improvement of current and future PE?' To analyse the data, an
38 amalgamation of inductive and deductive approaches was used. Three major themes
39 were constructed: (1) impact: PE teachers reinventing themselves to allow PE to
40 continue being educative; (2) resilience: learning and flourishing together to overcome
41 the challenge and improve the PE system; and (3) selective expansion: more physical
42 activity (PA) and digital technology. We concluded that the COVID-19 pandemic has
43 agitated the foundations of PE as a field, creating a scenario in which teachers show
44 high levels of collegiality and improved readiness to overcome current and future
45 challenges. This could be another stage of the PE journey towards community
46 aspirations (whatever they could be).

47 Keywords: blended learning; online learning; digital technology; secondary
48 education.

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53 **Introduction**

54 COVID-19 has prompted several changes in the educational field, including
55 physical education (PE) (Kamoga & Varea, 2022; Varea & González-Calvo,
56 2021). The pandemic resulted in new protocols that altered how PE teachers
57 teach, communicate, and interact with their students (Varea et al., 2022). In Spain,
58 as in many other countries, secondary PE teachers have experienced substantial
59 changes in their pedagogical routines. First, they quickly transitioned from in-
60 person to online teaching during the first lockdown at the end of the 2019-2020
61 academic year. Second, they learned how to implement blended teaching
62 approaches throughout the 2020-2021 academic year (López-Fernández et al.,
63 2021; Varea & González-Calvo, 2021). Finally, they went back to enact face-to-
64 face teaching approaches during the academic year 2021-2022.

65 Prior research has focused on exploring the limitations and difficulties PE
66 teachers face in teaching PE during the pandemic period (Chan et al., 2021;
67 Cuenca-Soto et al., 2021; D'Agostino et al., 2021; González-Calvo et al., 2022;
68 Jeong & So, 2020; Kim et al., 2021; Mercier et al., 2021; Monguillot et al., 2023;
69 O'Brien et al., 2022; Zheng et al., 2021). The main challenges reported were (1)
70 little technological knowledge exhibited by PE teachers, (2) lack of experience in
71 online teaching, (3) PE losing its meaning and value, (4) lack of technological
72 resources and Internet access problems, (5) teacher stress, and (6) low levels of
73 students' autonomy and engagement in the online environment. Additionally,
74 several studies have addressed the challenges of pandemic pedagogies
75 (Williamson et al., 2020), their effect on teachers (Kamoga & Varea, 2022), and
76 their influence on teaching and learning (López-Fernández et al., 2021).

77 Few studies have reported positive outcomes of teaching PE during the
78 pandemic, e.g., an increase in cooperation between teachers (Cece et al., 2022), or

79 the perception by teachers of having learned during the pandemic useful strategies
80 or tools to use after the pandemic (Vilchez et al., 2021). The latest studies
81 published on this topic emphasise the need to deepen the PE experiences of
82 teaching and learning during the COVID-19 pandemic to better understand how
83 this period has impacted PE teaching and what this means for the subject going
84 forward (Howley, 2022; Monguillot et al., 2023). Furthermore, some authors
85 consider the pandemic an opportunity to rethink ways of teaching PE (Fernández-
86 Rio, 2020) or to restructure the PE curriculum (Vilchez et al., 2021).

87 Hence, research on teaching and learning in this unique scenario conditioned by
88 the health measures imposed by the COVID-19 pandemic has focused on the (mostly
89 negative) implications and difficulties PE teachers faced during this period; little
90 attention has been paid to the (potentially positive) implications for teachers'
91 pedagogical practice and more importantly, for the future of PE. In particular, it is
92 important to understand the lessons learned by PE teachers and the changes (if any) that
93 remained once the non-pandemic reality was reinstated.

94 ***“Future” of Physical Education***

95 Reflecting on what leading authors have published about the future of PE, may provide
96 some direction and criteria for discussion to explore the 'PE journey' in the short and
97 medium term. Lawson (2009) and Quennerstedt (2019) call for the PE community to
98 (re)act and drive PE to its twenty-first century version have been selected for this
99 purpose.

100 Thirteen years have passed since Kirk's (2010) attempt to describe potential
101 future scenarios for PE, and his suggestion for a 'radical reform' as the only way for PE
102 to survive in the long term and avoid 'extinction'. According to what he terms 'the
103 future', and from an optimistic viewpoint, we may suggest that the PE field is

104 potentially moving towards the so-called radical change. As recently highlighted by
105 McMillan et al. (2021), certain evidence, such as meaningful PE, strengths-based
106 curriculum, student-designed games, and models-based practice, can be seen as the PE
107 journey heading towards community aspiration for reform. However, a global
108 pandemic occurred, and that could have potentially accelerated the 'PE journey' to the
109 suggested radical reform (Kirk, 2010) but not in the desired (mostly by academics)
110 direction. This could be the case where the impact from the pandemic could accelerate
111 the PE journey towards a more neo-liberalised version where expertise is expressed. To
112 illustrate this, the focus on PE has been moved to more heterogenous versions
113 including: a) a PE relied on a personal experiential knowledge, artefacts, and teaching
114 resources (Enright et al., 2020); b) a PE guided by medicalised and pathogenic
115 conceptions of health (Lawson, 2009; Quennerstedt, 2019); c) an outsourced PE
116 version, where students are viewed as customers (Sperka & Enright, 2019) and does not
117 support PE purposes as intended by various education systems (Mangione et al., 2022);
118 d) towards a PE where digital technology is used as a substitute for teachers and is not
119 transforming teaching and learning (Sargent & Calderón, 2021); or e) a PE where the
120 effects of consumer culture emphasise certain clothing brands and particular body types
121 (González-Calvo & Gerdin, 2023; Varea et al., 2018).

122 More optimistic perspectives would advocate for a positive impact where for
123 instance PE shifts from its 'sport-techniques' vision towards broader alternative
124 versions. Amongst these visions, it is important to underscore models-based practice
125 (Casey & Kirk, 2021); towards a PE based on the "virtuous mover" which has a focus
126 on the affective domain and concerned with helping students to comprehend their moral
127 potential in life through movement (Brunsdon, 2022); or towards meaningful student-
128 centred experiences where students are empowered to co-design their own PE

129 curriculum (Fletcher & Ní Chróinín, 2022). For the purpose of this study and to set
130 some direction in relation to the PE journey, we selected Lawson's (2009) and
131 Quennerstedt's (2019) comprehensive calls for reform and transformation. Lawson
132 (2009), in particular, makes his call based on five relevant premises and several design
133 criteria. For instance, some of the criteria suggested for the twenty-first century PE are:
134 (1) empowerment-oriented; (2) promotion of social integration and positive identities by
135 embracing diversity; (3) culturally responsive; (4) personalised, technology-assisted
136 learning with communities of practice; (5) positive youth development knowledge
137 implemented as caring-oriented service strategies and jointly employed by youth who
138 serve as co-leaders; (6) PE in after-school and community contexts that integrate health,
139 PE, and recreation linked to life course developmental needs; and (7) firm connections
140 involving embedded learning, extended learning, project learning and service learning.
141 Quennerstedt (2019) also advocated for more PE as the only 'real and sustainable aim'
142 (p. 612). For that to happen, he argues for transformative PE teaching and learning with
143 (1) a particular view of the child in education, (2) the open-endedness of PE, and (3) the
144 art of teaching in PE.

145 *Theoretical framework*

146 This study implemented an interpretive perspective based on the premise that human
147 actions can only be understood by exploring intersubjective meanings derived from
148 lived experiences (Pope, 2006). The varied nature of PE teachers' worlds is subjective
149 and shaped by human experiences and social contexts (Rosenthal, 2018). As a human
150 reality, the personal and social experiences of teaching PE during the COVID-19
151 pandemic, could be studied within its socio-historic context by interpreting the
152 meanings of the participants' particular experiences (Smith & Fieldsend, 2021). This
153 approach is in accordance with constructivism, in the sense that PE teachers are

154 accountable for establishing their individual perception of an experience, applying what
155 they understand, building on prior knowledge, and creating their meanings.
156 Furthermore, the data collected and dissected for this study are constructed not
157 discovered and the research exercise is a dynamic process with an active role for the
158 researchers in that process (Smith & Fieldsend, 2021). Social constructionism has been
159 adopted to shed light on exploring teachers' experiences of learning and knowledge-
160 construction processes (Richards et al., 2018). Asking PE teachers to identify, select,
161 and connect their personal backgrounds, experiences, and social contexts can promote
162 constructing knowledge in an individually meaningful manner.

163 Therefore, from a social constructionist focus on the process of analysing PE
164 knowledge, reflection, and action, two research questions led the study: (1) What do
165 teachers think that they have learned from the experience of teaching PE during the
166 COVID-19 pandemic? and (2) What effects and changes do teachers feel this
167 experience has had on the present and future of PE?

168 **Method**

169 *Participants*

170 The convenience research sample included 12 Spanish in-service secondary PE
171 teachers (11 men and one woman) aged between 30 and 50 years with teaching
172 experiences between 5 and 24 years in public schools. The teachers were working
173 in schools with low or middle socioeconomic level. Regarding PE teachers'
174 teaching philosophy, most of them shared a view that relied on meaningful and
175 innovative teaching by enacting active, varied methodologies and student-centred
176 approaches targeting students' autonomy support and positive values. They also
177 shared the idea that secondary school PE should promote students' comprehensive

178 development in a manner that favours the adoption of a physically active lifestyle.
179 The participating teachers self-reported their own socio-demographic data by
180 completing an online survey (see: <https://forms.gle/YqW3cm8SYFUCq8Jg9>).

181 ***Design and procedure***

182 This study adopted a cross-sectional qualitative design using methods aligned
183 with process-oriented methodology (Baur & Ernst, 2011). Participating teachers
184 were contacted via email. Twelve teachers voluntarily agreed to participate and
185 signed the consent forms. Furthermore, the guidelines stated that there were no
186 right or wrong answers; the only aim of the researchers was to learn teachers'
187 perceptions of blended and online learning. The data were kept confidential and
188 used exclusively for academic and research purposes, in accordance with the
189 ethical standards of the Helsinki Declaration for human research. Ethical approval
190 was granted by the Ethics Committee of the **University of Málaga (code: 136-**
191 **2021-H)**.

192 ***Interviews***

193 The interviews took place at the end of November and beginning of December
194 2021, involved groups of two to four teachers, and the average duration was 63
195 minutes. The interviews were held online and followed a semi-structured format
196 that allowed the researcher to have a few prepared questions and freedom to
197 explore specific answers in depth (Bryman, 2012). The interviews were recorded
198 and transcribed. After the introduction and sharing of ethical information, the
199 interviewer posed the following question: 'How can the experience of blended or
200 online PE contribute to the improvement of custom and future PE?' (see
201 **Appendix A**). The main prompts used in the interviews were related to (1) the

202 digital gap, (2) families, (3) professional learning, (4) students, and (5) teaching
203 and learning.

204 ***Data analysis***

205 This was conducted by using both inductive and deductive approaches. The coding
206 process included three differentiated phases according to the guidelines of Charmaz
207 (2014). Two researchers coded data separately and then shared and combined their
208 codes to assess their fit and usefulness. Differences in coding among researchers
209 generated new insights, rather than dismissing a colleague's codes that differed. To
210 minimise the researchers' interpretation, the initial coding phase was completed line by
211 line and consisted of extracting words and sentences from the teachers outlining the
212 particular data. During the second coding phase, focused codes were identified and re-
213 examined through constant comparisons with the initial codes developed during the first
214 phase. Likewise, a clustering technique was used to create a diagram of code
215 relationships. Moreover, informal analytic notes, commonly called memos, were used to
216 categorise the focused codes. In the third phase of coding, the categories were refined
217 and developed based on theoretical concepts. In the first phase, the analysis was more
218 inductive and descriptive; however, it was more deductive in the second and third
219 phases, guided by Lawson's (2009) design criteria and Quennerstedt's (2019)
220 transformative teaching and learning elements. Periodically, the research team discussed
221 and agreed upon the construction of themes. Memo-writing and clustering (Figure 1)
222 were used as prompts in the discussion process. Excerpts from the raw data presented in
223 the findings were selected because they are representative of the categories. The
224 researchers translated the excerpts from their original language into English. Excerpt
225 codes are based on the person interviewed and the participants' number (e.g., IP4).

226 [Insert Figure 1 about here, please]

227 **Results**

228 We formulated three themes that describe teachers' reality after experiencing three
229 different PE teaching approaches (e.g., face-to-face, online, or blended): (1) impact: PE
230 teachers reinventing themselves to allow PE to continue being educative; (2) resilience:
231 learning and flourishing together to overcome the challenge and improve the PE system;
232 and (3) selective expansion: more physical activity (PA) and digital technology.

233 ***Impact: PE teachers reinventing themselves to allow PE to continue being***
234 ***educative***

235 The COVID-19 pandemic brought about a sudden change in teaching and learning that
236 especially affected PE due to its content being practical and experiential. As one of the
237 interviewed teachers pointed out, 'it was a torpedo on the waterline' (IP2). According to
238 the teachers, the start of the COVID-19 pandemic compelled them to leave their
239 comfort zone and reinvent themselves to maintain teaching and learning standards. One
240 teacher suggested, 'I think it has been very interesting how we have had to reinvent
241 ourselves' (IP6). Regarding content and pedagogy, the participating teachers considered
242 PE as the subject that required unique changes to adapt to online and blended models.

243 The house has fallen, and we have had to rebuild it on a small foundation.

244 However, our strong ones suddenly took it from us and with a blow. We have
245 adapted not only the body and movement but also a new form of socialisation
246 (IP3).

247 The health measures imposed to curb the COVID-19 pandemic severely restricted
248 possible activities and implied PE reductionism. One participant cautioned that non-
249 face-to-face PE could end up becoming a mere repetition of movements.

250 The problem is that you turn it into a fitness class if you want to do something.

251 This is what television does, which shows a guy jumping, and you then follow

252 him. This is what we do now (IP10).

253 Teachers acknowledged that they had to eliminate certain content from planning, such as

254 team sports, while modifying others and promoting those that were more likely to be

255 developed in the new context. Among the prioritised content were physical fitness, certain

256 dances, and certain individual sports and physical activities that permitted social

257 distancing among students. Regarding instructional strategies, the effort can be seen in

258 making sense of the theoretical content previously covered using the support of digital

259 technology, as well as a transition towards a more competency-based evaluation (from

260 evaluating ‘theoretical knowledge’ to evaluating ‘practical knowledge, namely, the skills

261 of how to apply it in practice’).

262 I tried not to work on anything theoretically as we know it [...] content that I

263 previously taught theoretically a twist so that it could be worked on practically

264 [...], for example, they had to record themselves performing the Heimlich

265 manoeuvre; however, at the same time, they had to explain it (IP2).

266 Some teachers also reported an increase in the students’ participation in the assessment

267 process (self-assessment or peer-assessment) through the use of digital technology.

268 Blended teaching and learning promoted a significant involvement of students in day-

269 to-day decisions: ‘we also realised that many times we did not have the answer, the

270 students had it themselves and were able to create things that had not crossed our

271 minds’ (IP6). This participation of students favoured teachers’ motivation to face the

272 difficulties brought about by blended teaching and learning.

273 ***Resilience: Learning and flourishing together to overcome the challenge and***
274 ***improve the PE system***

275 The teachers mentioned that they were forced, to continue teaching online, to urgently
276 acquire training, not only in the use and integration of digital technology, but also in
277 teaching less familiar content that was not initially planned. There were insufficient
278 opportunities for continuous professional development, and the training seemed, in
279 general, ineffective. This scenario triggered a search for alternative and self-training
280 opportunities.

281 In our case, we had to find it for ourselves, as there was no formal training. The
282 pandemic situation indeed caught us unexpectedly. Furthermore, well, we
283 attempted to muddle through (IP1).

284 At the same time, teachers realised that they were not alone in facing ‘the common
285 enemy’ (IP8), which was COVID-19, and, given the need for training, they embraced
286 collaborative and peer learning. As one of the teachers put it: ‘with the pandemic, as
287 such, a sense of community emerged and teachers that you did not even know started
288 sharing teaching resources, units of learning, teaching ideas, among other things’ (IP9).
289 PE teachers’ networks and support groups (from blogs to telegram groups) were created
290 for PE teachers so that they could exchange resources, experiences, and reflections.

291 This was our initiative. Teachers were also connected. We had friends from
292 different cities, and we joined the Telegram group. We said, ‘We are going to
293 create something that allows us to be together and share the materials we have’
294 (IP8).

295 In other instances, existing groups were strengthened, and their sharing dynamics
296 improved. Initially, the role of these groups was to provide professional support;
297 however, over time, they became virtual spaces for informal networking and
298 counselling.

299 We were fortunate to have a working group comprising of PE teachers. Thus,
300 when the entire issue of the pandemic and blended learning came up, we came
301 together and started supporting one another, both psychologically and
302 professionally. The truth is that this was our escape mechanism. Therefore, it
303 was important to have someone on our side who shared the same reality (IP1).

304

305 This self-managed and free informal training was perceived as valuable and
306 flexible, and it contributed to their professional and personal development. It was
307 considered one of the positive legacies that continued when in-person teaching resumed:
308 ‘We have come together, our ties with other colleagues have improved and we are much
309 more generous when it comes to sharing our work and our own ideas’ (IP8). This was
310 seen by the teachers as an opportunity to strengthen a lost sense of community among
311 PE teachers, which could also improve teaching and learning over the medium and long
312 term.

313 All of these worked well during confinement, and many continued to work
314 cooperatively and share resources. I think it is something that we can explore
315 further; what it would be like to use these new technologies so that different
316 colleagues from various places can collaborate on inter-school approaches to
317 PE? (IP2).

318 The reality for the teachers interviewed fluctuated and shifted from being ‘tough’ in the
319 early months, to having flourishing moments and feelings of relief. The post-pandemic
320 teacher felt like a professional with more resources, versatility, flexibility, and
321 preparedness to face new and challenging situations. Resilience is the ability to adapt and
322 overcome adverse situations, with positive results, and this is what some PE teachers

323 perceive. They acknowledged that their teaching skills and self-esteem improved when
324 dealing with unprecedented scenarios.

325 In summary, the pandemic contributed to the personal and collaborative
326 professional development of PE teachers and PE as a subject. As one of the teachers
327 pointed out, ‘there are many things that I think are here to stay and that will help us and
328 the subject in the future’ (IP2).

329 *Selective expansion: more PA and digital technology*

330 The focus on digital technology use during the COVID-19 pandemic appears to have
331 led teachers to recognise its potential to increase students’ PA both in and out of school.
332 First, the time spent in the class to teach theoretical content was reduced, making it
333 available to students through digital technology, and sometimes accompanied by online
334 questionnaires to monitor and evaluate learning. The teachers interviewed agreed on the
335 convenience of taking the theoretical content out of class time, moving it to non-school
336 time, and giving the students the opportunity to do homework in PE.

337 Occasionally, this theoretical content, which has been used as a complement to
338 face-to-face classes, followed flipped learning.

339 The flipped classroom, no. I did not use it [before the COVID-19 pandemic]. I
340 now use it, and I think I will use it in the long run because the time-on-task
341 increases in my classes. I no longer have to explain this theoretical aspect
342 because they can learn it at home (IP8).

343 Assessment activities previously conducted during class were also moved to out-of-
344 school hours.

345 I used to waste much time if I did a practical test on group skipping, juggling, or
346 whatever because I recorded them and then performed the assessment by myself
347 separately. When it is an individual task they can do for me at home, I let them

348 record it, send it to me, see it more calmly, and assess it. So, I do not spend class
349 time anymore (IP10).

350 In this way, the time available for face-to-face classes has been increased for what the
351 participating teachers seem to consider to be the backbone of PE: movement and PA.
352 ‘we have to force them to use that little time that we have to do PA’ (IP8).

353 Second, mobile applications have been used to foster and track PA outside of
354 school hours.

355 I never thought that my students would record PA outside their school schedule
356 and would be able to create that habit. I like seeing how they keep using them in
357 their free time (IP6).

358 In addition to recording PA, these mobile applications made it possible to share results
359 and facilitate participants’ digital social interactions. After some positive experiences at
360 the beginning of the pandemic, these initiatives proliferated and remained in face-to-
361 face teaching to increase students’ PA.

362 We have often talked in PE that our work should be to create an active lifestyle
363 outside of school [...] Nevertheless, we have never had the tools to verify that
364 our students are actually doing this activity outside school hours. From a
365 positive perspective, we are beginning to use certain applications (IP2).

366 In short, digital technology has made it possible to selectively expand the possibilities
367 of PE to encourage PA outside school. PE teachers seem unwilling to give up on this
368 conquest, and this version of PE as PA and fitness is here to stay.

369 Positive results could also be obtained in this situation. This work outside of the
370 class I think can help us. These circumstances can help us improve. I think that
371 is where we should look to explore further (IP1).

372 Third, digital technology has also enabled families and, sometimes, the entire
373 community to participate in activities suggested by PE teachers. Families have done
374 more than just give advice, support, or record videos; they have also participated in the
375 activities.

376 Every week, I set some voluntary challenges for family participation. Therefore,
377 there were many times where you could see the sister practicing, sometimes
378 even the grandmothers [...], and they told me as part of the assignment:

379 ‘Teacher, my grandmother had a great time doing the TikTok dance’ (IP7).

380 In this sense, PE seemed to evolve towards a more family-oriented version, with content
381 and objectives focused on PA, as well as on family socialisation. Some PE teachers’
382 assignments included challenges that required the student to train a family member or
383 acquaintance: ‘We came to do service-learning with parents: train your father or train a
384 family member is one of the learning activities that were made [...] they had to do it as
385 a personal trainer’ (IP3).

386 Other activities had ambitious goals and involved the entire community,
387 such as implementing sustainable mobility projects. Finally, communication with
388 students about assignment proposals was sometimes conducted through virtual
389 spaces open to the community (e.g., blogs), and its impact went beyond the
390 schools’ limits. One of the (positive) unintended consequences of online PE has
391 transcended the students themselves and shown that school PE can directly impact
392 the entire community.

393 **Discussion**

394 This study aimed to explore the reality of several PE teachers and reflect on the version
395 of PE that, in its own case and context, was conditioned by the global pandemic. The
396 intention was to consider its (mis)alignment with Lawson's (2009) and Quennerstedt's
397 (2019) proposals to develop PE into its twenty-first century version. Reflecting on PE

398 teachers' reality after experiencing different teaching scenarios during unprecedented
399 times might shed light on potential avenues or pathways for PE to evolve in the short
400 and long term. Although the findings of this study mainly revealed inconsistencies in
401 the PE version profiled from PE teachers' realities, and Lawson's (2009) and
402 Quennerstedt's (2019) calls for transformation, some elements were prominent and
403 aligned between teachers' realities and both proposals. Considering Lawson (2009), our
404 data revealed evidence of teachers' collaborative work and the use of digital
405 technologies ('personalised, technology-assisted learning with communities of
406 practice'), as well as engagement with out-of-school activities and engagement with the
407 community, especially families ('PE in after-school and community contexts').
408 According to Quennerstedt (2019), there appears to have been a failed attempt to enact
409 transformative teaching and learning practices. However, there was a balance between
410 activities to promote discovery, creativity, and behavioural change in students' attitudes
411 towards PA practice. Finally, the educational elements of PE were somewhat missed,
412 and the criteria to inform professional judgments were mostly based on the intent to
413 focus on the physical domain towards an increase in PA levels in the out-of-school
414 context. The next sections unpack our three constructed themes and their alignment with
415 Lawson's (2009) and Quennerstedt's (2019) calls for transformation.

416 ***Personalised, technology-assisted learning with communities of practice***

417 As in most of the COVID-19 related studies reporting stories from teaching during a
418 pandemic, digital technology played a prominent role and influenced PE practice, in a
419 way that Fawns (2022) would label technological determinism. In this case, technology
420 drove pedagogy (not the other way round), and teachers reported little control other than
421 deciding on the tools to be used, mainly PA-tracking applications. The rapid shift in the
422 scenario for teaching and learning forced PE teachers to develop new teaching strategies

423 and the overuse of mobile apps to inspire young people (and their families) to be
424 ‘active’ in their own homes or elsewhere. However, they had no clear focus on quality
425 PE experiences but acted more as fitness instructors (Stirrup et al., 2020). There was a
426 problem with teachers’ digital literacy and skills, and their ability to teach through
427 online or blended approaches. Jeong and So (2020) also reported that lack of training in
428 online teaching posed great difficulties and barriers for teachers. Similarly, O’Brien et
429 al. (2022) pointed out that not all PE teachers could implement online or blended
430 learning and concluded that it was necessary to find new instructional approaches to
431 facilitate students’ engagement and active participation.

432 This situation triggered teachers to find alternative training models that allowed
433 them to take responsibility for their training while collaboratively learning with their
434 peers. The pandemic brought about an organic feeling and desire for teachers to work
435 and collaborate to face the situation with the support of the PE community. It has been
436 reported elsewhere that effective PE continuing professional development should
437 include collaborative opportunities within learning communities (Tannehill et al., 2021).

438 This type of collaboration among PE teachers, supporting each other by sharing
439 online resources, was also reported in previous research, where the networks among
440 colleagues provided training and helped PE teachers who faced difficulty creating
441 content in the early stage of online classes (Jeong & So, 2020). The PE teachers in this
442 study stated that collaborative learning and support, using digital technology and social
443 networks, facilitated personalised and technology-assisted teaching, and provided
444 psychological support. Indeed, teachers considered the creation of online learning
445 communities a potential legacy of the pandemic when returning to face-to-face
446 teaching. Considering that continuing professional development must be ongoing and
447 sustained, if we want it to be efficient (Bechtel & O’Sullivan, 2007), future research

448 should explore whether PE learning communities created or strengthened during the
449 COVID-19 pandemic exhibit long-term stability, or not in response to unprecedented
450 crisis (McMullen et al., 2022). Interestingly, PE teachers showed higher levels of
451 collaboration and support than teachers from other subject' areas (Cece et al., 2022).
452 However, we found no evidence of creating interdisciplinary networks with other
453 professions and lay leaders, which Lawson (2009) considered necessary to address the
454 significant social challenges across disciplines.

455 *PE in after-school and community contexts*

456 The teachers attempted to maximise face-to-face classroom time to engage in as much
457 PA as possible and to promote out-of-school practice. The use of student-centred
458 approaches mediated by technology that promote self-regulation of learning has opened
459 the door to new hybrid teaching models in PE that should be studied (Monguillot et al.,
460 2023). One of the methodologies used by the participants in the current study was
461 flipped classroom, which represents an alternative to work in PE classes in a practical
462 way (Cuenca-Soto et al., 2021). As shown above, teachers mainly used mobile
463 applications to encourage and monitor PA outside of school. Aligned positive effects
464 (e.g., increased motivation, implementation of more learner-centred instructional
465 models or digital competence work) of using mobile apps to encourage students' PA
466 outside school hours have been reported elsewhere (Zhao et al., 2016). Moreover, the
467 teachers considered that the use of these applications in PE would be maintained in
468 returning to face-to-face teaching. This result is in accordance with a previous study that
469 claimed that many PE teachers would like to use technology in the future to track
470 student progress, demonstrate exercise forms, and reform traditional standards (Vilchez
471 et al., 2021).

472 Coulter et al. (2021) underline that further learning intentions other than mere
473 PA (e.g., affective, cognitive) must accompany these initiatives to ensure that learning
474 occurs and that students are not solely physically active. In this study, we observed a
475 focus on activity levels and paid little attention to the educational element (E of PE) but
476 also assumed a pathogenic notion of health (Quennerstedt, 2019). Research that
477 analysed teachers' experiences during COVID-19 suppression measures in Australia
478 indicated that in most cases PE did not happen and was replaced by a PA provision
479 (Cruickshank et al., 2022).

480 In accordance with Coulter et al. (2021), this study found that including parents
481 or guardians to promote out-of-school practices may have provided an unforeseen
482 benefit. Parental involvement improves the school climate and establishes
483 communication between family and school (Goshin et al., 2021). Teaching online,
484 blended, or face-to-face, and the integrated use of digital technology led the
485 participating PE teachers to design strategies that have enhanced closer family
486 participation, not merely informative or supportive, but even becoming involved
487 directly in the PA proposed to be carried out outside school hours. D'Agostino et al.
488 (2021) indicated that PE teachers must play a leading role in providing the education
489 and support needed by families to be effective in helping students online, and that more
490 research is needed concerning the collaboration of families in online PE teaching. The
491 comprehensive school PA program model described by Webster et al. (2021) may
492 provide a framework for this wide approach to student PE because the intersectionality
493 of school PE, family, and community could have enormous potential.

494 This expanded PE framework is one of the premises that founded the design
495 criteria for new-century PE advocated by Lawson (2009). He suggested that future PE
496 should bridge school, family, and community relations and include new

497 intergenerational and family centred learning. We could say that, given the results of
498 this study, the changes in PE during the COVID-19 emergency may have helped to
499 advance along this path. Moreover, as revealed by Kirk (1999), it seems that this
500 ‘expanded PE’ (despite its focus on the physical domain) has narrowed the gap between
501 experiences provided to children in school contexts and the types of PA opportunities
502 they pursue outside school.

503 *Transformative teaching and learning practice*

504 It is not surprising to observe that the teaching and learning practices unpacked from
505 teachers’ reality and explored through Quennerstedt's (2019) lenses seemed overly
506 focused on the physical domain and did not consider the educative element of PE. As
507 previously described, students were mostly seen as repositories to fill out with physical
508 activities to develop their autonomy and lifelong practice. Despite teachers reporting
509 their efforts to create student-centred approaches, there was a dominant inclination
510 towards activities that aimed to promote behavioural change in students’ attitudes
511 towards PA practice. PE teachers prioritised activities that were more likely to develop
512 in the new context imposed by health prevention measures. It is interesting to note that
513 the new scenario imposed by COVID-19 replaced the hegemony of invasion games
514 with health and fitness instructions (Hortigüela-Alcalá et al., 2021). Coulter et al. (2021)
515 suggested that the increased focus on PA might have contributed to this approach
516 during the pandemic, with the risk of becoming a mere sport, fitness instruction, PA
517 facilitation, or obesity prevention (Quennerstedt, 2019).

518 In terms of the educational element and the art of teaching, it is interesting to
519 note that for the teachers in this study, whose teaching philosophies and purpose of PE
520 were mainly related to lifelong PA and healthy lifestyles, the focus on creating out-of-
521 school opportunities for the practice of PA could be considered as educative, as it could

522 potentially allow for the growth and development of students in the future. The
523 described experiences of practising PA within the community could also be considered
524 triggers of growth and related experiences. It could also be argued that the mentioned
525 experiences were empty (Quennerstedt, 2019), as the how and the what were dominant
526 (e.g., teachers sharing and using ready-to-use teaching resources), and the discussion
527 about the why of those practices (and resources), was minimal. However, this was
528 understandable given the unprecedented situation and chronic tensions between those
529 who advocate for the educative aim of PE for movement outcomes and those who
530 support the physical nature of PE to achieve health promotion outcomes (Pill, 2016).

531 **Conclusions**

532 Even though this was a situation forced by the pandemic, PE teachers in this study
533 showed that they can adapt themselves and their pedagogy to unprecedented unique
534 scenarios in a short period of time. They acknowledged that the lessons learned from
535 distance and blended learning during the COVID-19 pandemic could be used in the long
536 term, which is in line with Howley (2022), who considered it useful to delve deeper into
537 the experience of PE teachers during the pandemic to try to understand what this means
538 for the subject going forward. Additionally, the findings from this research contribute to
539 the existing literature on the topic with guidance on how issues such as teachers' peer
540 support (Cece et al., 2022), integration of digital technologies in the teaching-learning
541 process (Sargent & Calderón, 2021), and expansion of PE beyond the school and the
542 students themselves (D'Agostino et al., 2021) could evolve. In terms of teachers' peer
543 support, collaborative training among PE teachers, through digital technologies and
544 social networks, was used not only to improve teaching but also to provide
545 psychological support. The PE teachers felt they were now more accustomed to
546 teamwork and sharing information. Similarly, PE teachers feel more prepared, not only

547 to deal with the re-emergence of a pandemic, but also to face new challenges, which is
548 interesting given the unexpected challenges that might arise in the short term for
549 teachers worldwide (e.g. classroom diversity given massive war-associated migration,
550 artificial intelligence in education, etc.).

551 The PE teachers recognised they had greater knowledge of the digital
552 technologies applied to PE teaching. Moreover, they stated they would continue using
553 digital technologies in the future. Likewise, the change in the teaching-learning model
554 obliged PE teachers to develop new strategies; for instance, the widespread
555 incorporation and usage of digital technologies has led to implementing flipped learning
556 to teach PE theoretical content. However, the extent to which using digital technology
557 in PE is enabling teaching and learning, contributing to meaningful experiences, and the
558 value of teaching ‘theoretical’ content in PE should be considered.

559 Regarding the expansion of PE, the integration of PE practices beyond school
560 has enormous potential for medium- and long-term PE development. PE teachers are
561 now more aware that school PE is no longer limited to school hours or the school
562 setting and should consider the possibilities of using the environment in sustainable
563 ways but, more importantly, to explore the role of PE in developing sustainable
564 development goals. If we agree with Lawson's (2009) and Quennerstedt's (2019)
565 suggestions to drive PE to its twenty-first century version still has a long way to go, it
566 seems the journey will not be easy and will require a collective response (MacPhail &
567 Lawson, 2020). The COVID-19 pandemic has agitated the foundations of PE, creating a
568 scenario in which teachers show high levels of collegiality and improved readiness to
569 overcome current and future challenges. This could be another stage of the PE journey
570 towards community aspirations (whatever they are). The ‘pandemic legacy’, however,

571 may be fading, triggered by the power of tradition and history, and we might soon
572 forget all the positives of this past experience.

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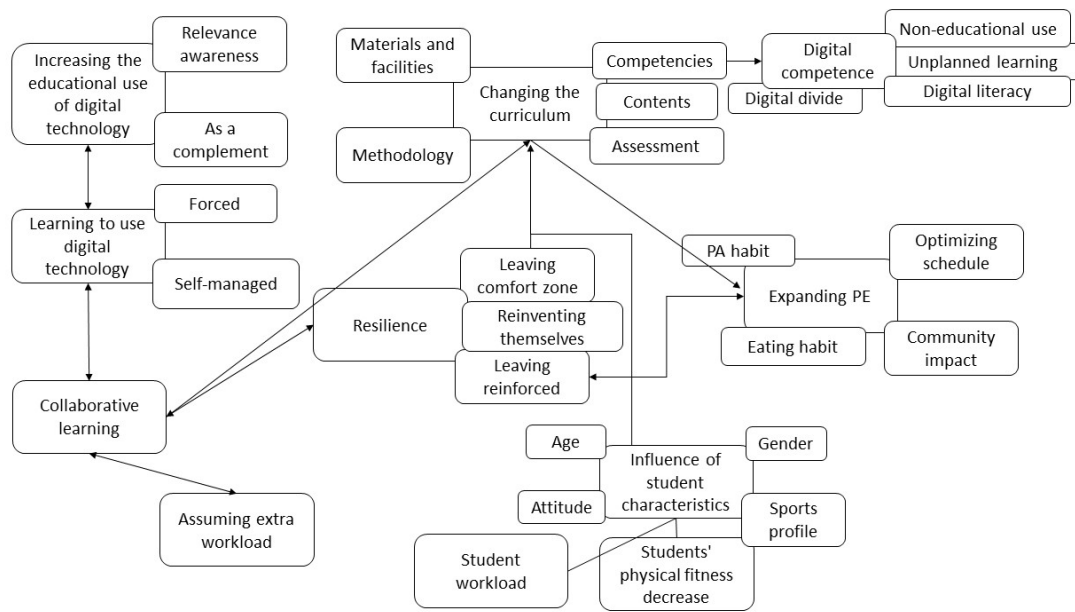
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746 Figure 1. Visual representation of cluster diagram



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748 Note. PA: physical activity; PE: physical education

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763 Appendix A

764 *Semi-structured interview script for the present research in Spanish language*

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766 1. ¿Cuáles han sido los principales inconvenientes o dificultades para impartir clases
767 durante la pandemia?

768 2. ¿Qué ha sido lo peor de dar clases de Educación Física durante la COVID-19?

769 3. ¿Qué es lo que más se ha echado en falta? Comparte alguna experiencia negativa,
770 que no te gustaría que se repitiera.

771 4. ¿Qué ventajas ha tenido la COVID-19 en la docencia de la Educación Física?

772 5. ¿Qué ha sido lo mejor de dar clases de EF durante la COVID-19? Señala alguna
773 experiencia positiva (de éxito) de la que te sientas orgulloso o alguna buena práctica de
774 compañeros profesores de Educación Física (ejemplos de buenas prácticas)

775 6. ¿Puede la Educación Física semipresencial ser significativa y transformadora?

776 7. ¿Has tenido en cuenta la opinión del alumnado para organizar la docencia
777 semipresencial?

778 8. ¿Qué podemos aprender de la experiencia de la Educación Física semipresencial
779 o no presencial que pueda contribuir a la mejora de la Educación Física del presente y del
780 futuro?

781 9. ¿Qué ha cambiado/ cree que cambiará en su docencia de Educación Física tras la
782 experiencia de la COVID-19?

783 10. ¿Qué te llevas en tu mochila de aprendizajes para la Educación Física de esta
784 experiencia con la COVID-19?

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