

1 **How to make physical activity promotion work in Thai schools:**

2 **Perspectives of multiple stakeholders**

3
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DRAFT

13 **Abstract** (200)

14

15 **Background:** This study aimed to determine current practice in physical activity (PA)
16 promotion in Thai schools, explore barriers and facilitators to PA promotion within the school
17 setting, and identify strategies to support schools' future practice. **Methods:** A qualitative
18 study design was applied comprising: document analysis; focus groups; in-depth interviews;
19 and onsite observations. The focus groups and in-depth interviews were conducted with 144
20 informants, purposively recruited through 24 schools in 4 regions across Thailand. Inductive
21 content analysis was used. **Results:** Most schools were promoting PA in the absence of
22 written policies, and without an accurate understanding of PA. Non-alignment of school
23 performance indicators and policies, concerns about children's academic performance, and
24 lack of budget were raised as barriers to PA promotion, whereas strong partnerships with
25 multiple local stakeholders facilitated school-based PA promotion. Mandated government PA
26 policies and more information support were suggested as strategies to enhance schools'
27 future practices. **Conclusions:** For PA promotion to be successful in the school setting,
28 significant challenges will need to be addressed. Results from this study help the
29 government and concerned stakeholders to better understand the situation at the school
30 level, and further strive for achieving the target PA levels specified in the National PA Plan.

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32 **Keywords:** Policy, implementation, health promotion, Thailand

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40 **Introduction**

41

42 Regular participation in physical activity (PA) provides a wide range of physical,
43 psychological and social health benefits for children and youth.¹ These benefits include
44 short- and long-term improvements in cognitive function, concentration and educational
45 performance.² However, recent evidence shows that globally a high proportion of children
46 and youth (67-73%) do not participate in an average of at least 60 min. of moderate to
47 vigorous physical activity (MVPA) per day as recommended by the global PA guidelines.³
48 Levels of inactivity among children and youth are high in developed countries, as well as in
49 developing countries such as Thailand.

50

51 The word “physical activity” is relatively new in Thailand, as well as in many other low- and
52 middle-income countries. PA is primarily recognized through specific activity domains,
53 particularly exercise and sports. However, many attempts have been made by several
54 authorities to increase PA levels in Thai children. In 2018, Thai Ministry of Public Health
55 (MOH) launched a National PA Plan to increase the proportion of people who meet the
56 global PA guidelines to 75% by 2030.⁴ The National Committee also adopted an “active
57 children” policy to support this endeavor, which was consistent with the “active people”
58 approach suggested by the Global Action Plan on PA 2018–2030.⁵ Thai Health Promotion
59 Foundation (ThaiHealth) has also implemented actions to promote active play in schools for
60 many years, such as the “come out and play” and “active play” programs.⁶

61

62 Schools have been identified as a key setting for the delivery of population-wide PA
63 promotion, as they provide almost universal access to a majority of children and youth.⁷
64 Schools are influential in cultivating lifelong PA habits in children, as this age group spends a
65 large amount of their waking time at school. In this regard, school PA policies and their
66 implementation are considered crucial to the success of promotional efforts to increase
67 children and youth’s PA levels.⁸

68

69 School PA policies can define priority areas, guide the delivery of school PA program
70 implementation, and identify targeted outcomes.⁹ A previous study disclosed that a majority
71 of Thai schools (>80%) reported having many policies in place to promote PA among
72 students, including: physical education (PE); standard school sport facilities; and
73 extracurricular activities. Nevertheless, these policies had no association with students'
74 overall PA.¹⁰ These findings suggested that if Thailand is to be successful in raising children
75 and youth's PA levels through the school setting, a greater understanding in what the
76 policies actually comprise and how school PA policies are implemented is required.

77

78 The complexity of school governing systems can make it challenging to advocate for PA in
79 schools. School policy formulation and implementation operate at different levels, are
80 multifaceted and involve multiple stakeholders. Similar to many other countries, the Thai
81 Ministry of Education (MOE) is the main agency supervising education at all levels and types
82 (formal and informal). The formal education system presents an opportunity to reach 83% of
83 school-age children (10.8 million).¹¹ Under the MOE, the Office of the Basic Education
84 Commission is responsible for the administration of the majority of the government's
85 elementary and secondary schools across the country (78%). The MOE coordinates this
86 school administration through its 18 regional education offices covering all 77 provincial
87 offices.¹² As displayed in Figure 1, the remaining schools are managed by different
88 government authorities within and outside the MOE.

89

90 At the school level, the principals employed by the MOE are assigned to oversee a school
91 for a four-year term, after which they are assigned to another school. All schools in the
92 country providing basic education follow the Basic Education Core Curriculum B.E. 2551
93 (2008) which broadly guides the contents and time allocation for the provision of all
94 educational disciplines.¹³ At present, there are five policies that are directly or indirectly
95 related to PA promotion in schools. PE and standard school sport facilities are the two

96 compulsory policies required for all schools. Third is an active learning policy, recently
97 introduced and promoted in all schools. Fourth is a policy on shared use of school sport
98 facilities with the community during after school hours. Last, the Health Promoting Schools
99 project implemented under the national school health policy of the MOH, which broadly
100 addresses physical health in general. The last three policies are adopted and implemented
101 on a voluntary basis.

102

103 **[Insert Figure 1 here]**

104

105 Little prior research provides detail on how school PA policies are implemented,⁸ and the
106 information is scarce in Thailand. Currently available implementation studies assess whether
107 schools adopt international and/or national PA policies, the degree to which implementation
108 complied with the policies/plans, and barriers and facilitators to implementation.¹⁴⁻¹⁸ Other
109 literature/documents only suggest general frameworks on how to plan and implement
110 policies to promote PA in the school setting.¹⁹⁻²¹ Therefore, this study aimed to: 1) determine
111 current practice in PA promotion in Thai schools; 2) explore barriers and facilitators to PA
112 promotion within the school setting, and 3) identify strategies to support future practice.

113

114 **Methods**

115

116 To gain an in-depth understanding of current practice to promote PA in Thai schools, and
117 the barriers and facilitators to PA promotion within the school setting, a qualitative study
118 design was applied.

119

120 ***Samples and recruitment***

121

122 Geographically, Thailand was stratified into four regions (Central, North, South,
123 Northeastern), and each region was stratified further into small, medium, and large

124 provinces based on their population size.²² A province was randomly selected from each
125 stratum in each region, resulting in 12 provinces. From each province, the city district was
126 purposively chosen and a non-city district was randomly chosen. Then, a school was
127 randomly chosen from the city district and the non-city district. From these stratifications, a
128 total of 24 schools were invited to participate in this study.

129

130 Field research staff contacted the schools and provided them with a document package,
131 including an invitation letter, information sheet, a list of interview questions, an example of
132 the consent form, and a copy of the certificate from the ethics committee. All invited schools
133 accepted the invitation and were requested to help recruit six informants: 1) school principal;
134 2) student affair teacher; 3) class teacher; 4) PE teacher; 5) parent/guardian or member of
135 school executive board; and 6) student. They were purposively invited to participate in this
136 study based on their involvement in policy implementation at the school level. In total, 144
137 informants participated in the study, and all participants took part in both a focus group and
138 an in-depth interview.

139

140 ***Data collection methods and protocols***

141

142 Data collection involved: 1) Reviews of schools' policy documents and strategic plans; 2)
143 Face-to-face focus group discussions; 3) Face-to-face in-depth interviews; and 4) Onsite
144 observations including taking photographs of school PA related facilities.

145

146 Based on Daly-Smith et al. (2020)²³ and the extensive experience of two co-authors (AA and
147 KP) in the PA and management fields, a conceptual framework of how schools implement
148 their PA policies and factors potentially influencing implementation of the policies was
149 depicted (Figure 2). The framework helped to ensure that all research team members
150 shared the same concept, and this assisted the development of two semi-structured
151 question guides, one for the focus groups and one for the interviews.

152

153 Schools could provide their strategic or operational plan to the research team on the data
154 collection day or send the electronic file(s) beforehand. Due to the geographical spread of
155 schools and resource constraints, all other data collection methods were conducted on the
156 same day at each participating school. On the data collection day, the focus group
157 discussion was conducted first, followed by the in-depth interview with each individual
158 informant and finally, the onsite observation. The same data collection methods and
159 protocols were applied in all schools. The whole data collection process at each school took
160 approximately 5-6 hours. Data were collected from August – October 2020 (post COVID-19
161 lockdown policy).

162

163 *1) Reviews of schools' policy documents and strategic plans*

164 All schools readily had their annual strategic plans available as they had to regularly report
165 to the MOE. The schools' 2020 strategic plans were reviewed before or after the data
166 collection day (depending on the school's submission). The key information needed was the
167 written PA policy statement(s) and strategies or action plans relevant to the policies.

168

169 *2) Face-to-face focus group discussions*

170 The focus group discussions were used to clarify the roles of each informant and explore the
171 relationships among the informants and group dynamics. The six informants (one from each
172 category) recruited through the school participated in the discussion, which was arranged at
173 a school's meeting room. During the discussion, the principal investigator acted as a
174 moderator, facilitating the focus group discussion. Other research team members (n=5) were
175 assigned a specific role, i.e., moderator assistant, question checker, notetaker, and
176 observer. High-level open-ended questions were asked e.g. What policies did the school
177 have in relation to PA promotion? How did the school implement the policies? Who were
178 involved in the process? What were their roles? The focus group discussion took
179 approximately 2-3 hours.

180

181 *3) Face-to-face in-depth interview*

182 The in-depth interviews were used to gain insights from each informant on PA promotion in
183 schools, and their involvement in and/or contributions or support to policy implementation.

184 The in-depth interviews were also arranged at the school's meeting rooms or in a nearby
185 area depending on the school's space. The principal investigator interviewed the school
186 principal. Thai co-authors and trained research staff interviewed other informant categories.

187 The interviews sought information on the informants' jobs and roles in the policy
188 implementation process, activities arranged, and barriers and facilitators to PA policy
189 implementation. The interview took approximately 1.5-2 hours.

190

191 *4) Onsite observation including taking photographs of school PA related facilities.*

192 Data from the onsite observation were used to verify the data collected from the focus groups
193 and interviews. Field research staff were assigned to take photographs of school PA related
194 facilities and sport/exercise equipment storage. The observation was accompanied by
195 teachers or other school personnel. The photo taking focused on the facilities and avoided
196 capturing students, due to ethical considerations. The digital photographs were saved and
197 classified according to school name. They were viewed subsequently by researchers during
198 data analysis. The onsite observation took approximately 1 hour at each school depending on
199 the school size.

200

201 This study protocol received ethical approval from Mahidol Central Institutional Review
202 Board (MU-CIRB 2020/104.0405). Written consent was obtained from all participants
203 included in this study.

204

205 **[Insert Figure 2 here]**

206

207

208

209 **Data analysis**

210

211 Digital voice recordings were transcribed verbatim without mentioning informants' names,
212 and randomly checked by the moderators/interviewers to ensure accuracy of the data. We
213 decided not to use any available data analysis software as they did not work well in the Thai
214 language. Twelve researchers in the team worked in pairs to analyze the transcripts. Each
215 pair was responsible for the same informant category as they conducted in-depth interviews
216 for. Data were analyzed between October 2020 and January 2021, using an inductive
217 method of open coding to allow broad concepts and patterns to emerge. Thematic codes
218 were grouped into larger categories or sub-themes, and subsequently, main themes. All
219 researchers were required to maintain their audit trails to be able to trace back their decision
220 making and ensure a rigorous analysis.

221

222 Interpretations of the transcripts and classification of codes into each main theme were
223 supported by informants' quotes or other relevant evidence; e.g., policy statements, strategic
224 plan and photos. Each pair of researchers discussed any disagreements on the themes
225 developed between them before presenting them in research team meetings. The presented
226 themes were challenged and they were discussed and verified among all researchers to
227 minimize bias. To help verify the main themes, 3 senior researchers (AA, KP, and NN)
228 reviewed all the transcripts (n=168; 24 focus groups and 144 interviews) and school policy
229 documents or strategic plans (24 schools), and discussed any disagreements until they
230 reached a consensus. This data analysis approach was adapted from Marshall & Rossman
231 (1999).²⁴

232

233 Draft results and recommendations of this study were presented in an online meeting in April
234 2021 among the school principals participating in this study. They reviewed the results and

235 commented on the recommendations. Their constructive comments were considered when
236 producing this manuscript.

237

238 **Results**

239

240 ***Characteristics of schools participating in the study***

241

242 Participating schools were equally distributed across geographical regions. The majority of
243 schools (87.5%) were under the supervision of the MOE's Office of the Basic Education
244 Commission, and more than half (66.7%) were secondary schools. Almost 60% of schools
245 had $\leq 1,500$ students, and almost all schools (96%) had no official written PA policies or
246 strategies as shown in table 1.

247

248 **[Insert Table 1 here]**

249

250 All schools that participated in this study implemented the MOE's policies on the provision of
251 PE class and standard school sport facilities. All schools complied with the minimum
252 requirements of both policies guided by the ministry (i.e., provision of 25 min of PE
253 class/week). Most schools were trying to adjust their teaching techniques to follow the
254 MOE's policy on active learning. All schools had experience in joining the Health Promoting
255 Schools project of the MOH. None of the participating schools initiated their own policies to
256 specifically promote PA, except one school located in a non-city district in the Northern
257 region. The principal of this school shared that the school's strategic plan clearly states that
258 there must be a project to promote PA or exercise among students.

259

260 The qualitative findings are grouped into four main themes: current practice in PA promotion
261 in schools; barriers to PA promotion within the school setting; facilitators to PA promotion
262 within the school setting; and strategies to support schools' future practice.

263

264 ***Current practice in PA promotion in schools***

265

266 ***1) Promoting PA without knowing it***

267 The word “Physical Activity” in Thai is relatively new and was complicated for participants to
268 understand. Researchers needed to explain the term and used the words ‘sport’ or ‘exercise’
269 interchangeably with PA to facilitate the conversation. School principals and teachers
270 realized subsequently that they were promoting a number of physical activities at school
271 without knowing that those activities promoted physical movements. The activities included,
272 for example: games/play (that required movements); bike to study at partnering university;
273 cleaning day; occupational training (e.g., planting or agricultural activities and construction);
274 boy or girl scouts; participation of students in community ritual ceremonies; traditional
275 dancing and musical performances; and musical instrument marching rehearsals or
276 competitions. Many principals and teachers expressed enthusiasm and pride, for instance,
277 one said “...*actually, we are doing a lot here in our school. We strongly support students’*
278 *“Pong Lang” plays, which is very famous in this area and neighboring provinces. People*
279 *know it well*”. “Pong Lang” is a traditional Thai musical performance in which players dance
280 fast while playing the musical instrument. Performers who play other musical instruments in
281 the band also dance along.

282

283 ***2) Promoting PA in absence of written school PA policies***

284 None of the informants were aware of the National PA Plan. They had never heard of the
285 World Health Organization’s PA guidelines and were unaware of the national PA
286 recommendations. Most schools (principals and teachers) reported that they did not have
287 any written policies designed specifically to promote PA in their school, in addition to the
288 policies imposed by the government. However, schools provided support to their students
289 through sport activities, competition, and clubs, as well as other PA related activities. One
290 principal said “*Well, our strategic plan only addresses health in general. We do not spell it*

291 *[PA promotion] out clearly in the plan, but we provide a lot of support to students' activities."*,
292 and another principal mentioned *"We don't have that [PA] policy...every activity must be*
293 *outlined in the [school strategic] plan in order to get the budget for the implementations"*.
294 Therefore, an *"absence of the policies, but a lot of actions"* is a typical scenario for most Thai
295 schools concerning PA promotion.

296

297 ***Barriers to PA promotion within the school setting***

298 ***1) Non-alignment of school performance indicators and policies***

299 Informants described inconsistencies between a set of school performance indicators of the
300 MOE and its expectations for schools to also comply to the policies of other ministries.
301 Informants raised that while schools had to comply with the MOE's education policies, they
302 also had to collaborate with other government authorities, as well as provincial and local
303 administrations, to handle many other issues such as elections, and community social and
304 cultural issues. However, the set of indicators used to evaluate schools' performance did not
305 include any criteria recognizing schools' extra efforts or active engagement in other policies
306 and issues. One principal explained *"They [the government] wanted us to implement this*
307 *and that...eventually they used the results from O-NET to assess if we are doing a good job.*
308 *There are no reasons why we need to do more [than we are officially required]"*. O-NET is
309 the Ordinary National Educational Test, which students in grades 6, 9 and 12 have to take to
310 examine their academic proficiency.

311

312 ***2) Serious concerns about students' academic performance***

313 Parents' concerns about their child's academic performance were raised as the most critical
314 factor for any school's decisions. Teachers and parents, including school executive board
315 members, highlighted that it was crucial to maintain parents' confidence that their child's
316 academic performance would not be negatively affected by any of the school's policies or
317 activities. Principals and teachers expressed concerns about schools being required to

318 promote PA and/or adopt an active school policy. One of them commented *“We all know that*
319 *exercise is important to children’s health and good for their brain, but parents are more*
320 *concerned about children’s grades”*. Informants found that it was not easy to convince
321 parents about the benefits of PA, as one teacher shared *“Some parents called me and*
322 *complained why school got their child to do things other than studying. Some of them even*
323 *offered to pay or make a donation to school in exchange for their child’s involvement in other*
324 *activities”*.

325

326 **3) Inadequate budgetary support**

327 Many principals and teachers, particularly from small schools or schools located in the non-
328 city districts, indicated that their school did not have an adequate budget to support PE and
329 PA (Government budget is allocated to schools based on the number of students).

330 Frequently raised issues were inadequate spaces or sport fields and sport/exercise

331 equipment. Some schools had sport/exercise facilities, but they were not in good condition.

332 One informant mentioned *“We need budget and equipment for our activities. We have*

333 *soccer and petanque fields but they do not meet the standard”*. One PE teacher expressed

334 similarly *“There are 30-40 students in each class. The number of sport equipment is limited;*

335 *for example, we have only 4-5 futsal balls. Some students in the class might not have a*

336 *chance to touch the ball”*. Another added that *“We had a project to teach students to swim*

337 *but we had no swimming pool and needed to ask for help from other organizations.... Sport*

338 *equipment are also not enough for our students...we want more (budget)...”*. One student

339 expressed *“[I] want the school to have more equipment and space for various activities such*

340 *as sport field. It is currently not convenient for exercise...”*. This information is supported by

341 photos taken at the schools which generally showed poor facilities and a lack of good quality

342 equipment.

343

344 **Facilitators to PA promotion within the school setting**

345

346 **1) Strong partnership with multiple local stakeholders**

347 Schools had a good connection with public and private organizations including state
348 enterprises and not-for-profit organizations. In addition, schools had a close connection with
349 guardian association, school alumni, and their community. Schools received strong support
350 from these stakeholders in many forms, including in-cash and in-kind. Examples of support
351 were given by many informants. First, *“Our school received an opportunity from the city, sub-
352 district administration, community leader, health village volunteers, head of the village. They
353 provided financial support to our school to buy equipment for our organized activities”*.
354 Second, *“Local Administration, temples, communities, police stations, and Sport University
355 in our province are kind to support athletic fields as we do not have that. We took our
356 students to use their facilities”*. Third, *“We work with Sport Associations...and...Provincial
357 Public Health Office and Thai Health Promotion Foundation. In light of the activities
358 concerning environmental issues, we work with Environment Institute, Department of
359 Environmental Quality Promotion, YMCA and Rotary clubs”*. Lastly, *“Parents support
360 equipment or sport clothes or water when we organized the activities”*.

361

362 **Strategies to support schools' future practice**

363

364 **1) Mandated and sustainable policies preferred**

365 Most school principals and teachers, and a majority of representatives of school executive
366 boards, preferred mandated policies. One principal raised *“We want them [the MOE] to
367 specify the policies clearly and apply the same across the country”*. Continuity and
368 sustainability of the policies was expressed as important by most schools, as reflected by
369 one principal: *“The Ministry [of Education] does it intermittently...we managed whatever they
370 wanted, but it was not promoted or supported on a regular basis. It usually comes for a while
371 and go...”*.

372

373 Mandated policies were preferred because informants felt that they needed institutional
374 support, and particularly a clear rationale underpinning each policy, approach or guideline, in
375 order to support and encourage implementation. In addition, the equitable application of
376 policies in all schools across the country would help schools in dealing with parents' or
377 guardians' questions and complaints. One teacher expressed that *"If the ministry does it all*
378 *the same, parents would not complain"*. Another suggested *"We not only want a top-down or*
379 *mandated policy, but also guidance and supporting tools or examples of how we can*
380 *promote PA in our class. We also want to know how PA can get along with subjects'*
381 *technical contents"*.

382

383 **2) More informational support needed**

384 Informants suggested that public campaigns would raise awareness among teachers and
385 parents, as well as the general public, about the importance of PA and how to integrate PA
386 into their daily lives. One principal pointed out *"Responsible authorities should publicize the*
387 *facts that PA is beneficial to children's learning ability"*. Most informants understood that PE
388 was the only class related to PA. When they participated in the focus group discussion, they
389 learned what PA is and realized that PA could be applied to other classes. However, they
390 needed guidance to integrate PA into their classes, especially at the beginning. As an
391 example, one teacher mentioned *"I can't really imagine how I can use PA in my Thai class"*.
392 Robust scientific evidence, particularly local experiments which are conducted in Thai
393 children and contexts, would help parents/guardians to be less worried about the negative
394 effects of PA (or exercise and active play) on their children's academic performance. One of
395 the principals raised *"We need strong evidence to show to the guardians that physical*
396 *activities or exercise help improve their child's academic outcomes"*.

397

398 **Discussion**

399

400 This study set out to explore current practices to promote PA in Thai schools, barriers and
401 facilitators to school PA promotion, and strategies to overcome challenges to PA promotion
402 in the school setting. Based on the qualitative content analysis of key stakeholders'
403 perspectives and experiences, PA was not well understood by stakeholders, received a low
404 priority, and was lacking in policy support at the national, provincial, and school levels. The
405 results of this study suggest there remains significant challenges that need to be considered
406 when promoting school-based PA in Thailand.

407

408 PA, like other health behaviors, operates across multiple levels within a complex system
409 (Figure 2). At the national level, there exists the PA plan, although schools were unaware of
410 its existence, of any policy direction, or guidance directed to the schools. At the provincial
411 level, there are policies or plans to promote people's health in general, but mostly through
412 the promotion of sports and exercise, rather than PA more broadly. At the school level, there
413 were almost no specific PA policies or plans beyond the ones required by the MOE. All but
414 one school had no strategic plans outlining actions and budgets dedicated directly to raising
415 participation in exercise or PA among students.

416

417 School principals and teachers considered PA promotion as an unnecessary extra effort, as
418 it was not formally evaluated as part of their performance. In part, this situation might have
419 been expected in Thailand, as there was little understanding of the term "physical activity" at
420 all levels. This contrasts practices in western countries, where PA occupies policy and
421 practices in the governance of schools and is strongly supported by education
422 departments.^{17,25} Nonetheless, Thai schools were offering their students opportunities to
423 engage in a range of sport and recreational activities that could be classified as PA. Most of
424 the organized activities were conducted outside of the classroom, and the types of activities
425 were related to schools' local socio-cultural contexts. The out-of-classroom opportunities for
426 PA occurred sporadically depending on the preferences of the principal or responsible
427 teachers who organized them, and consequently were unsustainable. PE was the only in-

428 class opportunity for Thai students to be physically active, and for PA to be promoted. This
429 finding is again contrasted by western countries where PA is mandated by the government
430 and schools are required to deliver PA to all children.^{17,25} In the U.S.A and Australia as
431 examples, there is a legislation(s) at the national level aiming to promote students' wellness
432 with a clear goal for PA. The Child Nutrition and Women, Infants, and Children
433 Reauthorization Act of 2004 of the U.S.A. requires all education agencies participating in
434 federal food programs to create a school wellness policy promoting healthy diet and PA.²⁵ In
435 Australia, the Schools Assistance Act 2004 (Sect 14) obliges state funding for government
436 schools to provide education with at least two hours of PA/week.¹⁷ These examples from
437 western countries reflect the significance of government policy support for PA promotion in
438 the school setting. The mandated policies assist schools by guiding their efforts and plans of
439 actions.²⁶ Evaluation studies show efficacy of the mandated policies in improving school
440 practices, as they ensure an alignment of the policies and a firm basis for implementation,
441 including resources at all levels.^{17,25,27,28} Evidence also shows that mandated policies help
442 address the equity and sustainability issue.²⁸ In Thailand, it seemed clear that when PA
443 policies were not mandatory and there were clashes between educational and health
444 demands, schools/teachers inevitably chose to respond to educational outcomes rather than
445 health-oriented outcomes. Thus, one way to help Thai schools to have written policies and
446 address PA in school action plans in a sustainable manner is to have a mandated PA policy
447 initiated at the national level, and this idea was supported by schools.

448
449 In the conceptual framework (Figure 2), attitudes of key stakeholders can also influence how
450 PA operates and is promoted. In our case, parents' concerns about their child' academic
451 outcome emerged, and were anecdotally believed to influence policy decisions at all levels.
452 Available literature shows that only 9% of Thai children engaged in active play for >2hr/day,
453 and 11.7% engaged in outdoor play of ≥ 2 hr/day.²⁹ The low levels of children's PA in
454 Thailand may reflect the low priority of parents, teachers and administrators for children to
455 engage in regular PA. These findings potentially reflect cultural differences in Thailand

456 compared with more developed western countries, where PA in children is prioritized by
457 most of society. Evidence suggests that when Thai children receive parental support, there
458 is a greater chance for them to engage more in PA.³⁰ However, parents in different cultures
459 have different views toward education and PA. Parents in Thailand and many other
460 countries in Asia (e.g., China, Korea, Taiwan) enormously invest in their child's education;
461 they reduce their spending on health and recreation or are financially in debt in order to give
462 their child the best possible education.³¹ This is because, other than a reputable degree,
463 there is no alternative pathway to success or a good profession, or in other words, high
464 income. This belief is deeply embedded in Asian social values and culture.³² Consequently,
465 parents' high hopes and the pressure placed on ensuring a good return on their investment
466 is understandable. Schools hold the main responsibility for the educational outcomes of their
467 students, thus their decisions and actions are susceptible to social values. This may explain
468 why Thai schools prefer a mandated PA policy rather than the policy initiated at the school-
469 level. In western countries, PA has long been introduced to society before it was in Asia; PA
470 receives a greater significance in people's lives, and has become part of their identity (i.e.,
471 personal taste and lifestyle) and culture. Leisure-time PA receive equal or greater
472 importance than studying, and this is particularly true in Europe.³³ Therefore, educational
473 system and schools must take responsibility for giving all children opportunities for daily PA
474 and developing movement habits that can be carried through to adulthood.³⁴ As discussed,
475 Asian parents' attitude toward PA may need to be altered for school-based PA promotion to
476 be successful. However, achieving a paradigm shift in social values and culture is highly
477 challenging and takes time. Certainly, there is considerable work to be done for anyone
478 attempting to increase PA amongst children in the Thai school system, on persuading
479 parents of the value of PA for their children. Furthermore, how willing principals/teachers,
480 civil servants and politicians will be to promote PA without strong parental support is
481 questionable.

482

483 For Thailand and other countries with similar school governing systems and cultural
484 contexts, we recommend lobbying for a mandated national PA policy to be implemented in
485 all schools. Otherwise, as the results of this study suggest, it is difficult to be consistent and
486 successful in raising children's PA levels. Communication efforts should be made from
487 national down to school level to disseminate the existing national PA plan, and to increase
488 public understanding about the concept of PA. Training programs for principals and teachers
489 should be considered to enhance PA literacy. Further investigation is required into how to
490 shift the cultural value of PA and children's health amongst the Thai population to value
491 regular PA as an important contributor to achieving developmental milestones. Additional
492 research is warranted on developing effective guidance or tools to support school policy
493 development and implementation. Finally, the findings suggest that parental support for the
494 value of PA in schools is critical to the success of any interventions. Therefore, there is
495 important work to be done in convincing people, and particularly parents, in Thailand and
496 potentially other Asian countries, of the value of PA. Therefore, further investigation into how
497 to gain parental support, including studies on the positive impact of PA/exercise on
498 children's academic performance should be conducted.

499

500 **Strengths and Limitations**

501

502 The present study has several strengths and limitations that need to be taken into
503 consideration when utilizing the study's findings and recommendations. The sample size is
504 relatively large and the sample was equally distributed across all geographical areas. This
505 large sample size and wide coverage helped ensure that the data were truly saturated and
506 represented typical scenarios across the country. Additionally, the results were triangulated
507 and verified by various sources and approaches (i.e., written evidence, photos, and key
508 informants). However, the school samples recruited into the study were public schools only.
509 Parents/guardians or members of the school executive board and students were recruited
510 with assistance from school principals or administration. Therefore, their views may

511 introduce bias in the data. Social desirability of the informants, their bias toward interviewers'
512 appearance and personalities, and experiences and interpretation of the researchers are
513 other possible limitations of qualitative studies.

514

515 **Conclusions**

516

517 The present study provided novel insights into schools' current practices in PA promotion,
518 factors hindering or facilitating PA policy implementation, and strategies to make PA policy
519 work in Thai schools. Results suggested a number of challenges that were interrelated to
520 each other in the Thai school educational system and culture. Results from this study can
521 help the government and concerned stakeholders to better understand the situation at the
522 school level and why PA efforts yield limited success. For the country to successfully reach
523 the national PA target levels by 2030, the findings from the present study should be taken
524 into account when initiating or revitalizing efforts to promote PA in the school setting.

525

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530

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535

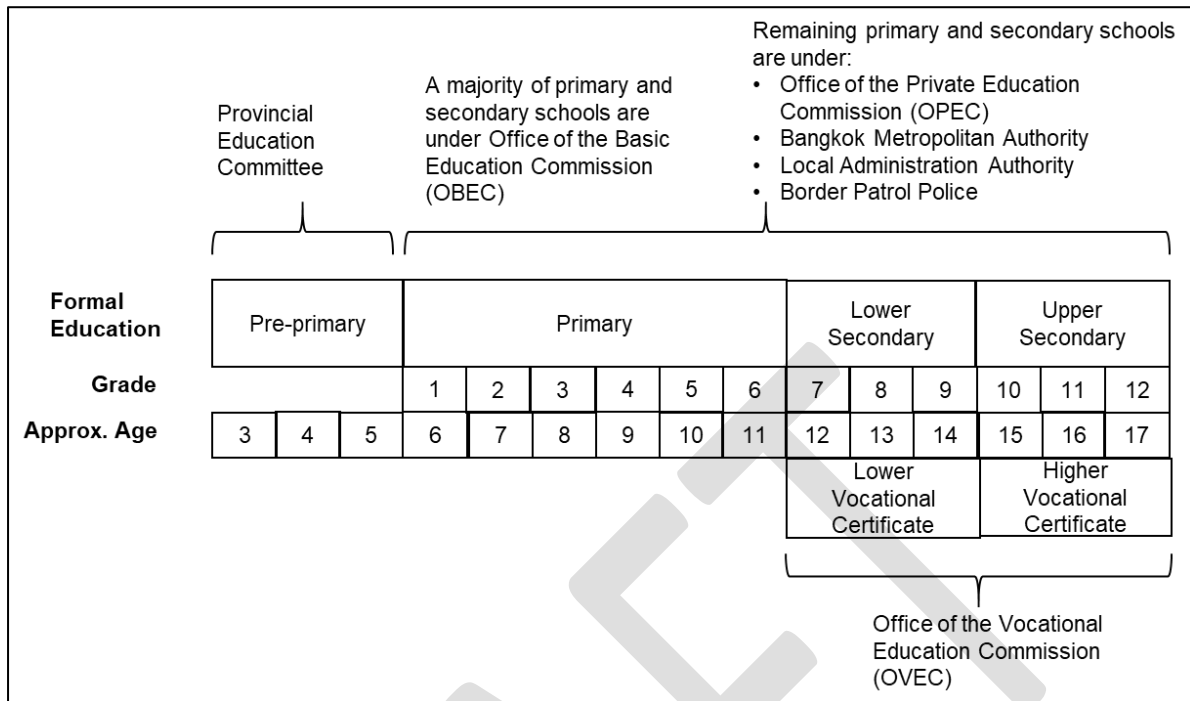
536 **Table 1:** Characteristics of the 24 participating schools

537

School characteristics	N (%)
School geographical location	
Central	6 (25.0)
North	6 (25.0)
South	6 (25.0)
North eastern	6 (25.0)
School district	
City district	12 (50.0)
Non-city district	12 (50.0)
School governing system	
Office of the Basic Education Commission	21 (87.5)
Local/Provincial Authority	3 (12.5)
Education level offered	
Kindergarten to junior secondary (K1- grade 9)	7 (29.2)
Primary to junior secondary (grade 1-9)	1 (4.1)
Secondary (grade 7-12)	16 (66.7)
Size of schools	
Small – Medium (<1500 students)	14 (58.33)
Large (≥1500 students)	10 (41.67)
School written PA policies/strategies	
Yes	1 (4.17)
No	23 (95.83)

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541 **Figure 1:** Thai formal education system [adapted from Bureau of International Cooperation -
 542 Ministry of Education¹²]

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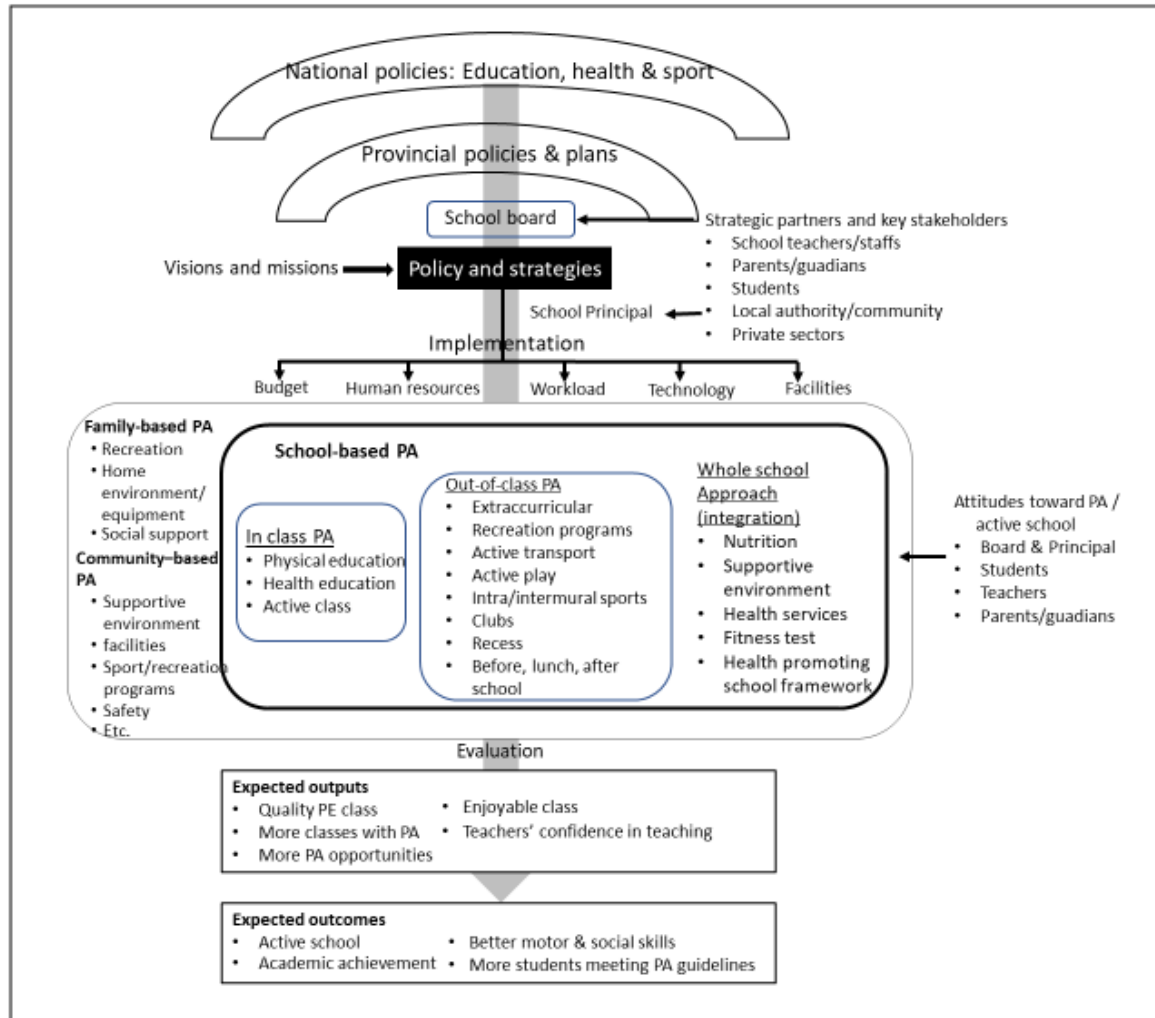
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558 **Figure 2:** Conceptual framework of school PA policy implementation [Adapted from Daly-

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Smith et al. (2020)²³

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