



PRIME PETE

PRIMARY EDUCATION PHYSICAL EDUCATION TEACHER EDUCATION

Evaluation study and report

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1. Introduction

An evaluation study and report can be an effective way to assess the effectiveness of a programme, project, or initiative. The purpose of the present PRIME PETE evaluation study and report was to gather and analyze data collected during the two Professional Development Events in Brixen, Italy, and Lisbon, Portugal (which were part of the Learning and Teaching Training events),¹ as well as to determine whether the PRIME PETE programme achieved its intended outcomes. More specifically, the study examined the Professional Development Events' implementation and the satisfaction towards the quality of the developed modules and micro-modules. This study was based on two previously developed Intellectual Outputs (IO): (1) IO#5 - development of a modular PRIME PETE programme consisting of course modules and micro-modules based on the theoretical and methodological framework for PRIME PETE; and (2) IO#6 - method and tool to evaluate the PETE course modules and micro-modules. The tools that were developed in IO#6 were used to evaluate the micro-modules developed in IO#5. By conducting this evaluation study and report, various stakeholders can gain insights into the strengths and weaknesses of the implementation of the project and the respective modules and micro-modules, identify areas for improvement, and make informed decisions about the implementation of the modules and micro-modules in the future. Finally, we hope to contribute to the research on physical education (PE) and help schools provide students with high-quality PE.

It is important to mention that all partners participated in the two Professional Development Events: however, despite all the efforts made, partners from Universidad de Sevilla, Faculdade de Motricidade Humana/Universidade de Lisboa, and Dublin City University did not manage to participate in the evaluation of micro-modules at their university to contribute towards the PRIME PETE modules, micro-modules, and respective materials. Dublin City University did not participate in the evaluation process at their university to contribute towards the PRIME PETE materials as this aspect of the project did not have ethical approval, while in the Faculdade de Motricidade Humana/Universidade de Lisboa the modules and micro-modules implementation took place during the first semester of the academic year 2022-2023, before the final decisions about the assessment process. This means that the actual implementation of the micro-modules took place in the three remaining universities, University of Luxembourg, Libera Università di Bolzano, and Trnavska Univerzita v Trnave (section 4).

¹ A **Learning and Teaching Training** event typically focuses on enhancing PE teachers' instructional skills and pedagogical strategies. It aims to provide them with new insights, techniques, and approaches to improve their teaching effectiveness and student engagement. On the other hand, a **Professional Development Event** has a broader scope and encompasses various aspects beyond teaching techniques, as it aims to enhance teachers' overall professional competence and growth. Similar events provide opportunities for PE teachers to expand their knowledge base, explore new ideas, network with professionals, and gain insights into the broader context of PE.

2. Professional Development Event in Brixen – Results of phase 1.1

2.1 Participants

A total of 10 educators (7 males, 3 females; 49.60±9.05 years) and 15 students (4 males, 11 females; 22.46±1.81 years) participated in the first Professional Development Event in Brixen, Italy, which was linked to the first Learning and Teaching Training event. The educators came from all partner institutions, while students were from all partner institutions, except for University of Luxembourg.

Most of the educators (80.0%) were teaching in generalist university programmes and had 21.20±10.23 years of teaching experience in third level initial teacher education and 6.80±5.76 years of teaching experience in primary and secondary level schools. On the other hand, 46.2% of the students were following a generalist teacher education programme, 30.8% a specialist PE programme, and 23.1% a generalist teacher education programme with PE specialization, with 53.8% of the students being enrolled in a master's degree programme and the remaining 46.2% in an undergraduate programme.

2.2 Educators' evaluation of the Professional Development Event

To ensure the quality of the Professional Development Event as well as improving it, all participants (educators and students) completed the Professional Development Event evaluation form, which consisted of 27 items including organizational aspects (5 items), teaching and content (14 items for students and 16 items for educators), implementation and feasibility of the event (5 items), and one item about recommending the event to peers. For all items a five-point Likert-type scale was used, ranging from disagree (1) to agree (5), and a not applicable (N/A) answer was also available (for more details see IO#6 - method and tool to evaluate the PETE course modules and micro-modules).

In most of the items the educators answered that they either agreed and/or rather agreed. For example, 100.0% of the educators agreed that the event was adequately and logically structured, 100.0% agreed that it was well designed, and a cumulative percentage of 100.0% of them rather agreed (20.0%) and agreed (80.0%) that the resources were well prepared. Interestingly, the educators also agreed (100.0% cumulative of rather agree and agree) that they were able to improve their knowledge and skills, and they were able to learn something new related to their teaching. It was further important to notice that the content of the event was compatible with their universities' curriculum (100.0% cumulative of rather agree and agree) and they could imagine themselves implementing PRIME PETE resources with their students (100.0% cumulative of rather agree and agree). On the other hand, the topics presented during the event were not new to them and they were familiar with these topics (100.0% cumulative of rather

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disagree and disagree). Finally, they all agreed or rather agreed (100.0% cumulative) that they would recommend this Professional Development Event to their colleagues.

Additionally, to gain a deeper insight and understanding on what the participants (educators and students) thought about the event, four open-ended questions were included regarding the best features of the event, things the participants did not like, potential changes that could be implemented, and specific comments about the Professional Development Event. The positive comments/feedback regarding the event were the interaction between students and educators, the dedicated time to discuss different topics and ideas, the time allocated to outdoor activities, the international diversity of teaching PE, and the overall engagement of students and educators. On the other hand, the main difficulty faced was that there were not always adequate materials and facilities during the event, which is an important organizational aspect to consider for future similar events.

2.3 Educators' evaluation of the micro-modules

To evaluate the micro-modules delivered during the Professional Development Event, all participants completed an evaluation form which contained items regarding the learning, teaching, assessment, feedback, workload, skills development, management, learning environment and overall satisfaction with the module (24 items). For all items a five-point Likert-type scale was used, ranging from very dissatisfied (1) to very satisfied (5), and a not applicable (N/A) answer was also available. Furthermore, one additional question was used about recommending the module to peers, with possible answers ranging from disagree (1) to agree (5) (for more details see IO#6 - method and tool to evaluate the PETE course modules and micro-modules). Items that received 30.0% or more of not applicable (N/A) answers were excluded from further analysis.

A total of 26 micro-modules evaluation forms were completed during the Professional Development Event, and seven micro-modules were evaluated (namely Understanding Physical Education: Cooperative Challenges Outdoors; Understanding Physical Education: Creative Dance; Didactics of Physical Education: Communication and Interaction; Foundations of Physical Education: Values-based Education through Sport and Physical Education; Teaching Physical Education: Classroom Management; School Physical and Health Education: Inclusive Primary Physical Education; and Planning and Implementation of Physical Education: Child-appropriate Physical Education).

The data for all micro-modules taught were analyzed collectively (and not separately for every micro-module). In general, all educators were either satisfied or very satisfied with the various elements of the micro-modules taught (80.0% cumulative or higher), and there were approximately 12.0% of “very dissatisfied” answers for most items. Additionally, nine items were excluded from the analysis since these

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questions that were not considered applicable/suitable in this specific context. The detailed descriptive analysis of all items is presented in Table 1.

Table 1 Descriptive statistics of the educators' micro-module evaluation form items.

Items	Percentage (%)					M (SD)
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	
1. The teaching on the module.	11.5	0.0	0.0	34.6	53.8	4.19 (1.27)
2. The delivery of the module (theory and practice).	11.5	0.0	0.0	38.5	50.0	4.15 (1.26)
3. The description of the module.	12.0	0.0	4.0	32.0	52.0	4.12 (1.30)
4. The content of the module.	12.0	0.0	4.0	44.0	40.0	4.00 (1.26)
5. The clarity of the module content.	12.0	0.0	8.0	28.0	52.0	4.08 (1.32)
6. The defined learning outcomes and/or objectives were adequately explained.	12.0	0.0	20.0	16.0	52.0	3.96 (1.37)
7. The learning materials (e.g., handouts, workshop material, case studies, websites, etc.).	12.5	0.0	8.3	29.2	50.0	4.04 (1.33)
8. The match of the content to the University curriculum.	(N/A=34.6)	-	-	-	-	-
9. The appropriateness of the assignments.	(N/A=46.2)	-	-	-	-	-
10. The explanation of the assessment criteria.	(N/A=46.2)	-	-	-	-	-
11. The assessment methods effectiveness in identifying students' strengths and areas for future development.	(N/A=46.2)	-	-	-	-	-
12. The communication of the learning outcomes and assessment model.	(N/A=30.8)	-	-	-	-	-
13. The overall workload.	(N/A=46.2)	-	-	-	-	-
14. The ECTS relevance to the workload.	(N/A=53.8)	-	-	-	-	-
15. The effectiveness of the module in raising students' professional development.	7.7	2.8	7.7	23.1	57.7	4.19 (1.23)
16. The quality of the support given by staff on assignments.	(N/A=46.2)	-	-	-	-	-
17. The preparation of teaching staff.	11.5	0.0	0.0	7.7	80.8	4.46 (1.30)
18. The approachability of teaching staff (i.e., instructive, inspiring, encouraging, and motivating).	11.5	0.0	0.0	11.5	76.9	4.42 (1.30)
19. The organisational arrangements for the module.	12.0	0.0	0.0	16.0	72.0	4.36 (1.32)
20. The relevance of the module in raising students' professional development.	11.5	0.0	3.8	23.1	61.5	4.40 (0.51)

21. The estimated workload is achievable, realistic, and adequate.	(N/A=42.3)	-	-	-	-	-
22. The transferability of the lessons learnt in the module to other settings.	7.7	3.8	11.5	19.2	57.7	4.15 (1.26)
23. The development of new skills and/or techniques due to this module.	11.5	0.0	23.1	19.2	46.2	3.88 (1.34)
24. My overall satisfaction with the module.	11.5	0.0	7.7	34.6	46.2	4.04 (1.28)
25. I would recommend this module to my peers and colleagues.	0.0	0.0	11.5	26.9	61.5	4.50 (0.71)

Similar to the evaluation of the Professional Development Event, participants (educators and students) were invited to answer four open-ended questions regarding the best features of the micro-module, things they did not like, potential changes that could be implemented, and specific comments about the micro-module. Positive aspects of the micro-modules taught were the mix of theory and practice, and the interconnection between these two elements, the adequate use of images, videos and open toolkit, and the practical ice breakers related to PE. There was a positive comment regarding the delivery of the dance micro-module, where students received a very good example of a dancing lesson, which is recognized as having an important role to play in fundamental movement skills development.

On the other hand, there were practical difficulties to assess some micro-modules' aspects, since only a few learning materials were provided to the students, and more "adrenaline" in the theoretical sessions could have been beneficial, as some educators thought that there was a little bit too much explanation. The major recognized issue with the content of the micro-modules was that there was a sport and games focus on most micro-modules, and this could have been avoided by providing a mixture of activity types for the Professional Development Event.

To overcome these challenges and improve the micro-modules in the future, the educators mentioned that it would be useful to have more appropriate material prepared (e.g., slides, references, handouts, and notes) to be able to evaluate the micro-modules more adequately. Furthermore, it is important the micro-modules to be adapted to the objectives, the age, and the level of the students; however, the adaptation with university students is not always an easy process. For example, educators could have chosen one objective, show one example, ask students to prepare one short teaching unit for specific children. Finally, clearer links and application to previous micro-modules during the Professional Development Event could have been developed to make the transition between the micro-modules smoother.

2.4 Students' evaluation of the Professional Development Event

In most items the students answered that they either agreed and/or rather agreed. For example, 100.0% of the students agreed that the content of the event would be helpful to them as teachers, 100.0% agreed that the teaching enabled them to attain the learning outcomes, and a cumulative percentage of 100.0% of them rather agreed (23.1%) and agreed (76.9%) that the presentation of the contents was clearly designed and developed. Furthermore, the students also agreed (100.0% cumulative of rather agree and agree) that they were able to improve their knowledge and skills, and they were able to learn something new related to their teaching. It was further important to notice that all students (100.0%) were able to learn something new for their teaching and they gained new knowledge from the event. On the other hand, only half of the students (46.2%) rather agreed or agreed the topics presented during the event were not new to them and they were never taught before these topics (38.5% cumulative). Taking into account that 46.2% of the students were following a generalist teacher education programme, it was easily understood that the event and the topics presented were more important and beneficial to those specific students, while students from PE programmes (either full or with a specialization) were more familiar with the topics discussed. Finally, they all agreed (100.0%) that they would recommend this Professional Development Event to their peers.

From the open-ended questions it was evident that the event was successful. The students highlighted the positive aspects, which were the practical examples of methodologies and ideas to implement in PE teaching, as well as the practical sections related to each micro-module, and the knowledge development of different ways that PE is viewed, taught, and valued in other countries and curricula (a European perspective). The variety of teaching approaches (theoretical and practical classes, and reflection on the contents learned) was an important positive aspect of the event, and the fact that all micro-modules' topics were interconnected. The students also mentioned the positive educators' involvement, since all educators were approachable and delivered adequately the respective content taught, and the critical feedback provided. The main negative aspect of the event was that the programme was too packed with activities, there was no time to take in what was happening, and there was not so much time to think about things and go deeper. This might be an issue with similar events where many topics and information have to be discussed and delivered in a limited amount of time (usually three to five days), which was the case with this specific Professional Development Event. Finally, in order to improve the event, students suggested that it would be helpful to perform themselves more micro-teaching activities, even though they acknowledge the challenges that might be faced due to the small number of the participants and the limited time. Additionally, students would like in the future to participate more in reflective moments.

2.5 Students' evaluation of the micro-modules

A total of 81 micro-modules evaluation forms were completed during the Professional Development Event, and seven micro-modules were evaluated (namely Understanding Physical Education: Cooperative Challenges Outdoors; Understanding Physical Education: Creative Dance; Didactics of Physical Education: Communication and Interaction; Foundations of Physical Education: Values-based Education through Sport and Physical Education; Didactics of Physical Education: Organisation and Classroom Management; School Physical and Health Education: Inclusive Primary Physical Education; and Planning and Implementation of Physical Education: Child-appropriate Physical Education).

In Table 2 the detailed descriptive analysis is presented, and it can be noted that there were not any students very dissatisfied and a few dissatisfied with aspects of the micro-modules. The majority of the students were either satisfied or very satisfied with these aspects (90.0% cumulative or higher). For example, 96.3% of the students were satisfied or very satisfied with the overall teaching of the micro-modules, 95.1% with the clarity of the micro-modules, and 97.5% would recommend these micro-modules to their peers.

Table 2 Descriptive statistics of the students' micro-module evaluation form items.

Items	Percentage (%)					M (SD)
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	
1. The teaching on the module.	0.0	0.0	3.7	19.8	76.5	4.73 (0.53)
2. The delivery of the module (theory and practice).	0.0	1.3	1.3	37.5	60.0	4.56 (0.59)
3. The description of the module.	0.0	0.0	5.0	33.8	61.3	4.56 (0.59)
4. The content of the module.	0.0	0.0	4.9	29.6	65.4	4.60 (0.59)
5. The clarity of the module content.	0.0	1.2	3.7	23.5	71.6	4.65 (0.62)
6. The defined learning outcomes and/or objectives were adequately explained.	0.0	0.0	2.5	29.6	67.9	4.65 (0.53)
7. The learning materials (e.g., handouts, workshop material, case studies, websites, etc.).	0.0	0.0	7.7	25.6	66.7	4.59 (0.63)
8. The match of the content to the University curriculum.	0.0	1.3	3.8	24.1	70.9	4.65 (0.62)
9. The appropriateness of the assignments.	0.0	0.0	7.9	28.9	63.2	4.55 (0.64)
10. The explanation of the assessment criteria.	0.0	0.0	14.9	19.4	65.7	4.51 (0.75)
11. The assessment methods effectiveness in identifying my strengths and areas for future development.	0.0	0.0	11.8	22.4	65.8	4.54 (0.70)

12. The communication of the learning outcomes and assessment model.	0.0	0.0	2.7	30.1	67.1	4.64 (0.54)
13. The overall workload.	0.0	0.0	0.0	19.2	80.8	4.81 (0.39)
14. The ECTS relevance to the workload.	(N/A=37.0)	-	-	-	-	-
15. The effectiveness of the module in raising my professional development.	0.0	1.3	1.3	32.5	64.9	4.61 (0.59)
16. The quality of the support given by staff on assignments.	0.0	0.0	2.6	23.1	74.4	4.72 (0.51)
17. The preparation of teaching staff.	0.0	0.0	0.0	18.8	81.3	4.81 (0.93)
18. The approachability of teaching staff (i.e., instructive, inspiring, encouraging, and motivating).	0.0	0.0	1.3	20.8	77.9	4.77 (0.46)
19. The organisational arrangements for the module.	0.0	0.0	1.3	20.8	77.9	4.77 (0.46)
20. The relevance of the module to raising my professional development.	0.0	0.0	3.8	28.2	67.9	4.64 (0.56)
21. The estimated workload is achievable, realistic, and adequate.	0.0	1.3	1.3	21.3	76.3	4.72 (0.55)
22. The transferability of the lessons learnt in the module to other settings.	0.0	0.0	1.3	17.7	81.0	4.80 (0.44)
23. The development of new skills and/or techniques due to this module.	0.0	1.3	3.8	30.4	64.6	4.58 (0.63)
24. My overall satisfaction with the module.	0.0	0.0	3.8	21.3	75.0	4.71 (0.53)
25. I would recommend this module to my peers.	0.0	0.0	2.5	21.0	76.5	4.74 (0.49)

Based on the answers to the open-ended questions, the students mentioned that positive aspects of the micro-modules were that these included practical, creative, and well explained activities. There were moments of reflection and critical thinking, there were opportunities to ask questions and the educators were open and available to answer them, and the communication was direct and clear. The theoretical parts of most micro-modules were explained in a great way involving all students and encouraging them to participate all the time, while the practical sessions were very motivating, as students were actively involved most of the times. The link between the theoretical and practical sessions was further highlighted by the students.

Some aspects that could potentially be improved, as suggested by the students, would be more effective and longer practical sessions, with less transition and travel times, and having more moments of freedom and creativity to implement what they have been taught. They also mentioned that there was a repetition

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between some modules, and probably this could have been avoided. Moreover, the students from specialist PE programmes discussed the fact that some of the contents presented were quite basic and had been covered in the first and second year of their university programmes. Therefore, they suggested that it would be nice to see some more developed or in-depth content covered. In general, the students proposed that they could have been more involved in the development of the micro-modules, especially during the theoretical part(s), and this approach could have enhanced the interaction between students and educators, as well as the interaction between students from different institutions.

2.6 Recommendations from the evaluation during the first Professional Development Event

Most of the students and educators agreed that the Professional Development Event was well designed and logically structured, and the overall presentation was adequately employed. They enjoyed participating in this event and they would recommend it to their peers. Additionally, most educators and some of the students (especially those studying in specialist PE programmes) also agreed that the topics presented were not new to them. This is a positive aspect for the educators, since they have taught before, and they were familiar with these topics. On the other hand, students being familiar with the topics presented requires further investigation and, possibly, slight amendments to avoid students becoming bored. A suggestion would be to have different topics presented to students with PE background and generalist students.

Some positive aspects of the event, identified by both students and educators, were the practical sessions implemented, the overall positive engagement and interaction of students and educators, the variety of teaching approaches used (e.g., theory, practice, demonstration, reflection, discussion), and the international perspective of the event. On the other hand, a negative aspect, identified mainly by the students, was that the event was too packed with activities, and there was not much time available to think/reflect. To improve future similar events, educators suggested including more practical sessions and reflections intermediated with the theoretical sessions in the gym. Also, students would like to do some of the teaching during the implementation of the modules (i.e., more micro-teaching by the students).

Regarding the content and delivery of the micro-modules, the vast majority of the students and educators were satisfied with the various elements of the micro-modules taught, and there were no dissatisfied or limited very dissatisfied answers. To further improve the micro-modules taught, the following recommendations can be useful: (1) more adequate explanation about the contribution of the tasks to pupils PE learning; (2) more materials (e.g., slides, references, notes, handouts, etc.) and resources would be beneficial; (3) more active breaks should be included; (4) content of higher difficulty level (not only

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basic activities) should be included, since many students have already experienced teaching PE in various settings and some content have been covered in the first and second year of university; (5) a variety of physical activities other than sports and games, as well as the use of different activities in the modules (i.e., some activities seemed to overlap and were very similar) should be included.

3. Professional Development Event in Lisbon – Results of phase 1.2

3.1 Participants

A total of 11 educators (7 males, 4 females; 46.80 ± 13.14 years) and 13 students (2 males, 11 females; 22.30 ± 1.95 years) participated in the second Professional Development Event in Lisbon, Portugal, which was linked to the second Learning and Teaching Training event. Both the educators and students came from all partner institutions.

In this event, 40.0% of the educators was teaching in generalist university programmes, while the remaining 60.0% was teaching in specialist PE university programmes. They had 15.80 ± 13.90 years of teaching experience in third level initial teacher education and 13.20 ± 15.14 years of teaching experience in primary and secondary level schools. On the other hand, only one student completed the event's evaluation form, so no demographic information can be presented for the students who attended the event.

3.2 Educators' evaluation of the Professional Development Event

In the second Professional Development Event, similar to the first one, the educators answered that they either agreed and/or rather agreed with the majority of the items. For example, 100.0% of the educators agreed that the students engaged and participated actively, 100.0% agreed that it was well designed, and a cumulative percentage of 100.0% of them rather agreed (40.0%) and agreed (60.0%) that the event was delivered at an appropriate pace. Furthermore, the educators also agreed (80.0% cumulative of rather agree and agree) that they were able to improve their knowledge and skills during the event, and they were able to learn something new related to their teaching. This result is somewhat lower than the first Professional Development Event (100.0% cumulative), however it is important to notice that some of the educators participated in both events and were familiar with the structure and content. It was further important to notice, once more, that the content of the event was compatible with their universities' curriculum (100.0% cumulative of rather agree and agree), they could imagine themselves implementing PRIME PETE resources with their students (100.0% cumulative of rather agree and agree) and the event

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motivated them to implement the contents in their own teaching (100.0% agreed). Finally, they all agreed or rather agreed (100.0% cumulative) that they would recommend this Professional Development Event to their colleagues.

Specific comments for this event were related to the quality of the youth hostel that the educators and students stayed, which could have been better, and the long distance from the hostel to the event's facilities. On the other hand, the positive aspects included the quality of the facilities, and the socialization that took place between all participants, that led to fruitful and important professional discussions and exchange of interesting ideas.

3.3 Educators' evaluation of the micro-modules

A total of 18 micro-modules evaluation forms were completed during the Professional Development Event, and six micro-modules were evaluated (namely Active School Models: Active School; Understanding Physical Education: Fundamental Movement Skills; Foundations of Physical Education: Knowledge and Understanding of Physical Activity Recommendations; Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education; School Physical and Health Education: Swimming as a Tool to Support Lifelong Physical Activity; and Teaching Physical Education: Motor Development, Learning and Implications for Teaching).

Once more, as it can be seen in more detail in Table 3, most educators were either satisfied or very satisfied with the delivery of the micro-modules (85.0% cumulative or higher). The educators answered that they were satisfied (35.3%) or very satisfied (52.9%) with the teaching on the micro-modules, satisfied (47.1%) or very satisfied (52.9%) with the match of the contents to the universities' curriculums, and overall satisfied (55.6%) or very satisfied (44.4%) with all the micro-modules. Also, the not applicable answers were significantly reduced compared to the first Professional Development Event.

Table 3 Descriptive statistics of the educators' micro-module evaluation form items.

Items	Percentage (%)					M (SD)
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	
1. The teaching on the module.	0.0	0.0	11.8	35.3	52.9	4.41 (0.71)
2. The delivery of the module (theory and practice).	0.0	0.0	23.5	17.6	58.8	4.35 (0.86)
3. The description of the module.	0.0	0.0	6.7	20.0	73.3	4.67 (0.62)
4. The content of the module.	0.0	0.0	5.9	41.2	52.9	4.47 (0.62)
5. The clarity of the module content.	0.0	0.0	0.0	41.2	58.8	4.59 (0.51)

6. The defined learning outcomes and/or objectives were adequately explained.	0.0	0.0	6.3	37.5	56.3	4.50 (0.63)
7. The learning materials (e.g., handouts, workshop material, case studies, websites, etc.).	5.9	0.0	0.0	41.2	52.9	4.35 (1.00)
8. The match of the content to the University curriculum.	0.0	0.0	0.0	47.1	52.9	4.53 (0.51)
9. The appropriateness of the assignments.	0.0	0.0	0.0	50.0	50.0	4.50 (0.51)
10. The explanation of the assessment criteria.	(N/A=33.3)	-	-	-	-	-
11. The assessment methods effectiveness in identifying students' strengths and areas for future development.	(N/A=33.3)	-	-	-	-	-
12. The communication of the learning outcomes and assessment model.	(N/A=33.3)	-	-	-	-	-
13. The overall workload.	(N/A=33.3)	-	-	-	-	-
14. The ECTS relevance to the workload.	(N/A=33.3)	-	-	-	-	-
15. The effectiveness of the module in raising students' professional development.	0.0	0.0	0.0	27.8	72.2	4.72 (0.46)
16. The quality of the support given by staff on assignments.	0.0	0.0	7.1	42.9	50.0	4.43 (0.65)
17. The preparation of teaching staff.	0.0	0.0	0.0	22.2	77.8	4.78 (0.43)
18. The approachability of teaching staff (i.e., instructive, inspiring, encouraging, and motivating).	0.0	0.0	11.1	22.2	66.7	4.56 (0.71)
19. The organisational arrangements for the module.	0.0	0.0	11.1	38.9	50.0	4.39 (0.70)
20. The relevance of the module in raising students' professional development.	0.0	0.0	0.0	33.3	66.7	4.67 (0.49)
21. The estimated workload is achievable, realistic, and adequate.	0.0	0.0	0.0	31.3	68.8	4.69 (0.48)
22. The transferability of the lessons learnt in the module to other settings.	0.0	0.0	5.6	33.3	60.0	4.53 (0.64)
23. The development of new skills and/or techniques due to this module.	0.0	0.0	5.6	38.9	55.6	4.50 (0.62)
24. My overall satisfaction with the module.	0.0	0.0	0.0	55.6	44.4	4.44 (0.51)
25. I would recommend this module to my peers and colleagues.	0.0	0.0	5.6	50.0	44.4	4.39 (0.61)

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Specific positive comments about the delivery and implementation of the micro-modules were related to the commitment of the students and the interaction with the educators, and the group work included in some micro-modules. Furthermore, some micro-modules (e.g., related to physical literacy and active schools) had their contents, theoretical approaches, and applied implications clearly explained, and most contents were engaging and accurate. In addition, the delivery through illustrative tasks, video presentations and self-filming of the students to understand and improve their skills (e.g., during Understanding Physical Education: Fundamental Movement Skills) were considered interesting and engaging ways.

The major challenge faced in many micro-modules was that there was too much theoretical content and a minimum of practical examples/implementation by the students, and sometimes this theoretical content was not directly related to the practical sessions. Based on this challenge, the educators suggested that it would be beneficial for the micro-modules to have more adequately developed practical components, and this would further assist with the interaction between themselves and the students.

3.4 Students' evaluation of the Professional Development Event

The Professional Development Event evaluation form was completed by one student, so no concrete and useful results can be derived from this questionnaire. Based on this, the students' evaluation of the second Professional Development Event has been omitted.

3.5 Students' evaluation of the micro-modules

A total of 37 micro-modules evaluation forms were completed during the Professional Development Event, and six micro-modules were evaluated (namely Active School Models: Active School; Understanding Physical Education: Fundamental Movement Skills; Foundations of Physical Education: Knowledge and Understanding of Physical Activity Recommendations; Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education; School Physical and Health Education: Swimming as a Tool to Support Lifelong Physical Activity; and Teaching Physical Education: Motor Development, Learning and Implications for Teaching). The detailed descriptive analysis of all items is presented in Table 4. As in the previous Professional Development Event, the students were satisfied or very satisfied with every aspect of the micro-modules (85.0% cumulative or higher). Their overall satisfaction with all micro-modules was very high (94.5% cumulative) and they agreed that they would recommend these micro-modules to their peers (94.6% cumulative).

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Table 4 Descriptive statistics of the students' micro-module evaluation form items.

Items	Percentage (%)					M (SD)
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	
1. The teaching on the module.	0.0	2.7	2.7	32.4	62.2	4.54 (0.69)
2. The delivery of the module (theory and practice).	0.0	5.4	5.4	35.1	54.1	4.38 (0.83)
3. The description of the module.	0.0	0.0	10.8	35.1	54.1	4.43 (0.69)
4. The content of the module.	0.0	2.7	2.7	24.3	70.3	4.62 (0.68)
5. The clarity of the module content.	0.0	0.0	2.7	37.8	59.5	4.57 (0.56)
6. The defined learning outcomes and/or objectives were adequately explained.	0.0	2.7	8.1	35.1	54.1	4.41 (0.76)
7. The learning materials (e.g., handouts, workshop material, case studies, websites, etc.).	0.0	5.4	8.1	37.8	48.6	4.30 (0.85)
8. The match of the content to the University curriculum.	0.0	0.0	5.4	29.7	64.9	4.59 (0.60)
9. The appropriateness of the assignments.	0.0	0.0	6.1	27.3	66.7	4.61 (0.61)
10. The explanation of the assessment criteria.	(N/A=37.8)	-	-	-	-	-
11. The assessment methods effectiveness in identifying my strengths and areas for future development.	(N/A=32.1)	-	-	-	-	-
12. The communication of the learning outcomes and assessment model.	0.0	0.0	6.7	30.0	63.3	4.57 (0.63)
13. The overall workload.	0.0	0.0	12.9	22.6	64.5	4.52 (0.72)
14. The ECTS relevance to the workload.	(N/A=45.9)	-	-	-	-	-
15. The effectiveness of the module in raising my professional development.	0.0	0.0	5.4	32.4	62.2	4.57 (0.60)
16. The quality of the support given by staff on assignments.	0.0	2.9	8.8	11.8	76.5	4.62 (0.78)
17. The preparation of teaching staff.	0.0	2.8	5.6	30.6	61.1	4.50 (0.74)
18. The approachability of teaching staff (i.e., instructive, inspiring, encouraging, and motivating).	0.0	2.8	0.0	19.4	77.8	4.72 (0.62)
19. The organisational arrangements for the module.	0.0	2.7	16.2	35.1	45.9	4.24 (0.83)
20. The relevance of the module to raising my professional development.	(N/A=42.3)	-	-	-	-	-
21. The estimated workload is achievable, realistic, and adequate.	0.0	0.0	3.2	25.8	71.0	4.68 (0.54)

22. The transferability of the lessons learnt in the module to other settings.	0.0	5.6	0.0	33.3	61.1	4.50 (0.78)
23. The development of new skills and/or techniques due to this module.	0.0	0.0	16.7	25.0	58.3	4.42 (0.77)
24. My overall satisfaction with the module.	0.0	5.6	0.0	27.8	66.7	4.56 (0.77)
25. I would recommend this module to my peers.	0.0	2.7	2.7	29.7	64.9	4.57 (0.69)

The students mentioned in their open-ended answers that a positive aspect of the micro-modules was the teaching of practical aspects (e.g., games) that could be implemented in PE classes with minimum equipment, even though some parts might have been challenging, but useful. Also, the preparation of the teaching staff was highly appreciated, motivated, and inspired them to improve their own teaching skills. The differentiation of the activities for different age group categories was a useful addition to some of the micro-modules, as well as the take-home messages and the reflection discussions. Finally, many positive comments regarding the School Physical and Health Education: Swimming as a Tool to Support Lifelong Physical Activity micro-module were made. For example, it was mentioned that the theoretical information about the properties of water was very informative, the knowledge gained that it is possible to teach swimming in the first cycle of education, and the explanation why it is so important to assist children learn to swim at an early age.

Once more some challenges that should be overcome were the long theoretical sessions, as many students would prefer more practical ones, and the fact that students especially from PE specialization programmes considered that some micro-modules had some repetitions, and they were familiar with. A specific comment was made for the School Physical and Health Education: Swimming as a Tool to Support Lifelong Physical Activity micro-module, and the delivery. Due to a lack of swimming pool, the micro-module only had a theoretical component, and the students did not have the opportunity to implement what they were taught in water. As one student mentioned, “the lesson was very dry”.

To further improve the delivery and implementation of the micro-modules the students suggested to have more hands-on practical sessions, more time for discussion and reflection after the practical sessions, and to practice in a swimming pool for that specific micro-module. Also, the integration of more workshops and/or group work, as well as the presentation of innovative activities and new approaches to teaching could have been beneficial for the involvement of the students.

3.6 Recommendations from the evaluation during the second Professional Development Event

In the second Professional Development Event, most of the students and educators agreed that it was well designed and logically structured, and the overall presentation was adequately employed. They further enjoyed participating in this event and they would recommend it to their peers. They also agreed that the content of the event was compatible with their universities' curriculum, they could imagine themselves implementing PRIME PETE resources with their peers and the overall event motivated them to implement the contents in their own teaching. Some organizational aspects were reported that potentially could have been improved, such as the quality of the residing hostel and the distance between the hostel and the facilities. On the other hand, the quality of the university's facilities received a positive evaluation.

Regarding the content and delivery of the micro-modules, most students and educators were satisfied with the various elements of the micro-modules taught, and there were no dissatisfied or limited very dissatisfied answers. In general, overall satisfaction with all micro-modules was very high. Also, the not applicable answers were significantly reduced compared to the first Professional Development Event, which means that the aspects of the micro-modules' delivery were aligned with the developed evaluation tool.

Positive comments about the delivery and implementation of the micro-modules were related to the commitment of the students and the interaction with the educators, the group work included in some micro-modules. Also, the variety of delivery avenues implemented (e.g., illustrative tasks, self-filming, video presentations) were considered interesting and engaging. The differentiation of the activities for different age group categories was a useful addition to some of the micro-modules, as well as the take-home messages and the reflection discussions. A specific micro-module, namely School Physical and Health Education: Swimming as a Tool to Support Lifelong Physical Activity was highlighted by both students and educators and received many positive comments.

The major challenge faced for many micro-modules was that there were long theoretical sessions and a minimum of practical examples/implementation by the students, and sometimes this theoretical content was not directly related to the practical sessions. To further improve the delivery and implementation of the micro-modules the students and educators agreed that more adequately developed practical components, more time for discussion and reflection after the practical sessions is necessary, and the integration of more workshops and/or group work, as well as the presentation of innovative activities and new approaches to teaching could be beneficial for the involvement of the students.

4. Implementation of the micro-modules in the partner institutions - Results of phase 2.0

4.1 Participants

The main implementation of the micro-modules took place in three partner institutions, namely: University of Luxembourg, Libera Università di Bolzano, and Trnavská Univerzita v Trnave. In this phase, the micro-modules were implemented, tested, and evaluated in real life conditions during an entire academic semester. The implementation of the micro-modules in the Professional Development Events and during an entire semester at partner institutions differed in several aspects, including scope, duration, and structure. A total of three educators (2 males, 1 female; 54.40 ± 16.07 years) and 37 students (5 males, 32 females; 22.14 ± 1.85 years) participated in the evaluation of the micro-modules in the three partner institutions.

Two out of the three educators were teaching in generalist university programmes and had 20.80 ± 17.07 years (median=25.0 years) of teaching experience in third level initial teacher education and 22.80 ± 20.50 years (median=15.0 years) of teaching experience in primary and secondary level schools. On the other hand, 92.2% of the students were following a generalist teacher education programme and 7.8% a specialist PE programme, with 48.4% of the students being enrolled in a master's degree programme and the remaining 51.6% in an undergraduate programme. The majority of students were in the second year of studies (59.4%) and had no previous teaching experience (67.2%). Those who reported having teaching experience gained it by teaching in primary schools, participating in internship programmes, or substituting in-service teachers.

4.2 Educators' evaluation of the micro-modules

A total of five micro-modules evaluation forms² were completed during the implementation in the partner institutions, and five micro-modules were evaluated (namely Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education; Foundations of Physical Education: Values-based Education through Sport and Physical Education; School Physical and Health Education: Inclusive Primary Physical Education; Pedagogical Project in Physical Education; and Active Schools Model: Active Schools).

In general, all three educators for all five respective micro-modules that they taught reported that they were satisfied with all micro-module aspects (100.0% cumulative of satisfied and very satisfied answers).

² Due to the small number of completed evaluation forms, the results will not be presented in detail in a separate table.

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For example, the educators were satisfied in two of the modules and very satisfied in the remaining three modules regarding the effectiveness of the modules in raising their professional development, the overall workload, the organisational arrangements for the modules, and the relevance of the modules in raising students' professional development. They were overall very satisfied with four modules and simply satisfied with one module, and they would highly recommend all five modules to their colleagues. Overall, the higher satisfaction levels were reported for Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education; Foundations of Physical Education: Values-based Education through Sport and Physical Education; School Physical and Health Education: Inclusive Primary Physical Education; and Active Schools Model: Active Schools micro-modules, while a somewhat lower satisfaction level was achieved for Pedagogical Project in Physical Education micro-module. No further micro-module specific comments were reported by the educators.

4.3 Students' evaluation of the micro-modules

A total of 64 micro-modules evaluation forms were completed during the implementation in the partner institutions, and five micro-modules were evaluated (namely Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education; Foundations of Physical Education: Values-based Education through Sport and Physical Education; School Physical and Health Education: Inclusive Primary Physical Education; Pedagogical Project in Physical Education; and Active Schools Model: Active Schools). The detailed descriptive analysis of all items is presented in Table 5. Similar to the two Professional Development Events, the students were satisfied or very satisfied with every aspect of the taught micro-modules in their universities (80.0% cumulative or higher). Their overall satisfaction with all micro-modules was very high (87.5% cumulative) and they agreed that they would recommend these micro-modules to their peers (86.0% cumulative).

To control for possible differences in students' replies between the five micro-modules that were taught in the main study, an analysis of variance (ANOVA) was implemented for every single item, with the significance level set to $p < 0.05$. No statistically significant differences were observed between the five micro-modules in 23 out of 25 items ($p > 0.05$). Significant differences were observed in "The preparation of teaching staff" ($F=3.50$, $p=0.012$, $\eta^2=0.195$) and "I would recommend this module to my peers" ($F=3.35$, $p=0.015$, $\eta^2=0.185$) items. More specifically, students considered that the preparation of the teaching staff was significantly higher ($p=0.030$) in the Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education ($M=4.70$, $SD=0.73$) micro-module compared to the Pedagogical Project in Physical Education ($M=3.50$, $SD=0.84$). Also, the Pedagogical Project in Physical Education micro-module ($M=3.50$, $SD=0.55$) would have been significantly less recommended to the peers

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($p=0.023$) compared to Foundations of Physical Education: Values-based Education through Sport and Physical Education ($M=4.50$, $SD=0.52$) and Pedagogical Project in Physical Education ($M=3.50$, $SD=0.55$) ($p=0.016$).

Table 5. Descriptive statistics of the students' micro-module evaluation form items.

Items	Percentage (%)					M (SD)
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	
1. The teaching on the module.	3.1	1.6	1.6	42.2	51.6	4.38 (0.86)
2. The delivery of the module (theory and practice).	1.6	1.6	9.4	53.1	34.4	4.17 (0.79)
3. The description of the module.	1.6	3.2	15.9	44.4	34.9	4.08 (0.89)
4. The content of the module.	1.6	0.0	10.9	40.6	46.9	4.31 (0.79)
5. The clarity of the module content.	1.6	1.6	11.1	39.7	46.0	4.27 (0.85)
6. The defined learning outcomes and/or objectives were adequately explained.	1.6	3.2	6.5	51.6	37.1	4.19 (0.83)
7. The learning materials (e.g., handouts, workshop material, case studies, websites, etc.).	4.8	0.0	22.2	39.7	33.3	3.97 (1.00)
8. The match of the content to the University curriculum.	1.6	1.6	12.7	47.6	36.5	4.16 (0.83)
9. The appropriateness of the assignments.	1.6	1.6	16.1	46.8	33.9	4.10 (0.84)
10. The explanation of the assessment criteria.	1.6	4.8	15.9	34.9	42.9	4.13 (0.96)
11. The assessment methods effectiveness in identifying my strengths and areas for future development.	1.6	4.8	19.4	37.1	37.1	4.03 (0.96)
12. The communication of the learning outcomes and assessment model.	3.2	1.6	6.5	50.0	38.7	4.19 (0.88)
13. The overall workload.	1.6	4.8	11.3	48.4	33.9	4.08 (0.89)
14. The ECTS relevance to the workload.	1.6	3.3	18.0	54.1	23.0	3.93 (0.83)
15. The effectiveness of the module in raising my professional development.	4.8	3.2	11.3	35.5	45.2	4.13 (1.06)
16. The quality of the support given by staff on assignments.	3.3	3.3	9.8	41.0	42.6	4.16 (0.97)
17. The preparation of teaching staff.	1.6	4.8	6.3	30.2	57.1	4.37 (0.92)
18. The approachability of teaching staff (i.e., instructive, inspiring, encouraging, and motivating).	3.2	1.6	11.1	23.8	60.3	4.37 (0.97)
19. The organisational arrangements for the module.	1.6	6.3	10.9	46.9	34.4	4.06 (0.92)

20. The relevance of the module to raising my professional development.	3.3	3.3	9.8	41.0	42.6	4.16 (0.97)
21. The estimated workload is achievable, realistic, and adequate.	3.2	6.3	7.9	47.6	34.9	4.05 (0.99)
22. The transferability of the lessons learnt in the module to other settings.	1.6	4.8	9.7	38.7	45.2	4.21 (0.93)
23. The development of new skills and/or techniques due to this module.	1.6	4.8	12.7	36.5	44.4	4.17 (0.94)
24. My overall satisfaction with the module.	1.6	3.1	7.8	40.6	46.9	4.28 (0.86)
25. I would recommend this module to my peers.	0.0	0.0	14.1	46.9	39.1	4.25 (0.69)

A few micro-module specific comments were made by the students in the main study. In general, the students described all five micro-modules as “very clear, interesting, engaging and inspiring”, and could respond to their needs on a theoretical and practical basis. Also, the connection between theory and practice was highlighted by the students. The presentation and explanation of the Self-determination theory was highly appreciated by the students in the Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education micro-module, as well as the chapter regarding the increase of enjoyment in PE. On the other hand, for this specific micro-module students thought that even though it was interesting, it was going too fast, and the topics should have been discussed in more depth. The theoretical sessions were once more perceived as too long and should have been alternated with more practical ones, and many students answered that they would expect more practical sessions with more concrete and practical examples, and more precise instructions on the task. Furthermore, including some other material like videos, activities, and anything more active for the class to follow the lectures could have improved the teaching and learning outcome.

4.5 Recommendations from the micro-modules’ evaluation in the partner institutions

During the main implementation of the five micro-modules in the three partner institutions, both educators and students were satisfied or very satisfied with all the aspects included. Overall, the higher satisfaction levels were reported for Foundations of Physical Education: Motivation, Motivational Climate and Enjoyment in Physical Education; Foundations of Physical Education: Values-based Education through Sport and Physical Education; School Physical and Health Education: Inclusive Primary Physical Education; and Active Schools Model: Active Schools micro-modules, while a somewhat lower satisfaction level was achieved for Pedagogical Project in Physical Education micro-module. This specific micro-module (i.e.,

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Pedagogical Project in Physical Education), which was an entirely theoretical one, received lower satisfaction levels in the preparation of the teaching staff and the potential recommendation to other peer students. It should be mentioned here that this micro-module, which was taught in the University of Luxembourg, might have been affected by a series of unfortunate events and internal unforeseen changes that took place in this specific institution during the lifespan of the PRIME PETE programme. In general, the students described all five micro-modules as “very clear, interesting, engaging and inspiring”, and could respond to their needs on a theoretical and practical basis. Also, the connection between theory and practice was highlighted by the students, which is something that has been improved compared to the Professional Development Events, however, the theoretical sessions were once more perceived as too long and should have been alternated with more practical ones.

5. Summary - Recommendations

During the implementation of the PRIME PETE programme, the evaluation of the modules and micro-modules took place in three main events, two Professional Development Events and the main evaluation that happened in three partner institutions. The implementation of the micro-modules in the Professional Development Events and during an entire semester at partner institutions differed in several aspects, including scope, duration, and structure. For example, the micro-modules in the Professional Development Events were condensed, time-limited, and designed to fit within a shorter time frame, while their implementation during an academic semester was extended over several weeks, aligning with the duration of the entire course, and allowing for a deeper exploration of the subject matter. A total of 24 educators (16 males, 8 females) and 65 students (11 males, 54 females) participated in the evaluation process. They all completed two separate evaluation forms which were developed in IO#6 - method and tool to evaluate the PETE course modules and micro-modules, one for the Professional Development Event and one for every single micro-module. A total of 49 Professional Development Event and 231 micro-module evaluation forms were completed by students and educators.

Regarding the Professional Development Events, most of the students and educators agreed that these were well designed and logically structured, and the overall presentation was adequately employed. They enjoyed participating in these events and they would recommend them to their peers. Some positive aspects of the events, identified by both students and educators, were the practical sessions implemented, the overall positive engagement and interaction between students and educators, the variety of teaching approaches used, and the international perspective of the events. On the other hand, a negative aspect of both events was that these were too packed with activities, and there was not much

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time available for constructive reflection. To improve future similar events, most participants suggested including more practical and micro-teaching sessions and reflections intermediated with the theoretical sessions in the gym.

Likewise, students and educators had a positive view of the content and delivery of the micro-modules, and the vast majority were satisfied with the various elements of the micro-modules taught. In general, overall satisfaction with all micro-modules was very high. An important point to consider is the fact that students studying in PE specialist programmes believed that they were familiar with some of the topics and micro-modules taught, and repetitions occurred. To overcome this challenge, a possible solution might be to have different topics presented to students with PE background and generalist students.

Some general suggestion to further improve the modules taught are the following: (1) more adequate explanation about the contribution of the tasks to student teachers PE learning; (2) more materials and resources might be beneficial; (3) more active breaks should be included; (4) content of higher difficulty level (not only basic activities) should be included, since many students have already experienced teaching PE in various settings and some content have been covered in the first and second year of university; (5) a variety of physical activities other than sports and games, as well as the use of different activities in the modules should be included.

The major challenge faced in many micro-modules was that there were long theoretical sessions and a minimum of practical examples, and sometimes this theoretical content was not directly related to the practical sessions. To further improve the delivery and implementation of the micro-modules the students and educators agreed that more adequately developed practical components, more time for discussion and reflection after the practical sessions is necessary, and the integration of more workshops and/or group work, as well as the presentation of innovative activities and new approaches to teaching can be beneficial for the involvement of the students.

The present evaluation report yielded important conclusions that have the potential to inform: (1) teaching effectiveness, assisting the identification of micro-modules that effectively engage students, promote active learning, and facilitate knowledge retention; (2) student satisfaction (e.g., micro-module content, organization, and delivery); (3) curriculum development, by enabling the identification of outdated or redundant micro-modules, facilitating the inclusion of new and relevant modules and micro-modules that better prepare students for their future careers; (4) quality assurance, by identifying micro-modules that fall short of the desired standards, allowing for corrective actions to be taken; and (5) continuous improvement of similar Professional Development Events and modules and micro-modules that will be developed in the future. These conclusions enable institutions to enhance the overall educational experience and better prepare students for their academic and professional journeys.