Teacher-Centered Professional Development: Identifying Needs, Designing Programs, and Evaluating Engagement (Case of the International Arab Baccalaureate)

Joe Ephrem[1*] Bassem Kandil[2]

1. Faculty of Educational Sciences, Saint Joseph University of Beirut, Beirut, Lebanon

2. Faculty of Educational Sciences, Saint Joseph University of Beirut, Beirut, Lebanon

* E-mail of the corresponding author: joe.ephrem@net.usj.edu.lb

Abstract

For the past five years, Lebanon's education sector has faced many external challenges that vary in nature from political to economic. These challenges have led to a shift of students from the public to the private sector and increased the demand for international education programs. Subsequently, this has also increased the demand for professional development programs to accommodate the consequences of this shift. In this study, the researcher identified the characteristics of an effective professional development program from the teachers' perspective. The researcher also studied the level of the teachers' engagement in these programs if they were given the chance to take part in the design. The study is divided into three parts. The first part is pre-implementation. The researcher used mixed methods simultaneously to collect data on the characteristics of an effective professional development program. The second part is about the design of the program. The researcher implemented the documentation review technique to plan for the program. The third part includes the post-implementation, where the researcher used mixed methods sequentially to collect data about the level of engagement and feedback on the administered program. The findings show that the content, delivery method, and complementary follow-up program, such as coaching, are important factors in designing an effective professional development program. Moreover, the teachers' background and educational level seem not to have an impact on the level of engagement; however, the years of experience have little impact.

Keywords: professional development, adult learning, teacher engagement, teacher-centered approach, training effectiveness, in-service training, program design

DOI: 10.7176/JEP/17-3-06

Publication date: March 28th 2026

1. Introduction

The education sector in Lebanon has been facing a lot of challenges for the past five years. It started with the October 17 revolution in 2019, the sudden lockdown due to the COVID-19 pandemic and the Beirut explosion in 2020, the currency devaluation, and the economic crisis that is still persistent to date. These circumstances have led more than 700,000 students out of school (Lebanon: Education at a Tipping Point - Education Sector Advocacy Brief, 2021). On top of that, the sector witnessed a shift of more than 100,000 students from private to public schools between 2019 and 2021 (Lebanon: Planning Lapses Endanger School Year, 2021), noting that the private sector constitutes 70% of the educational institutions in Lebanon, as per the Statistical Bulletin - Academic Year 2018/2019 (2019) released by the Center for Educational Research and Development (CERD), Lebanon. A reverse shift occurred in the following academic years, 2021 - 2022 and 2022 - 2023, with the continuous strikes of teachers in the public sector for a salary increase due to the devaluation of the Lebanese currency. The strike also affected the national assessment and, consequently, the national qualification (Coury, 2022; Rahhal, 2020). To overcome the challenges of the national assessment and the national qualification, and to provide an alternative for the students, schools in the private sector put their efforts into improving or adopting international systems and qualifications (Coury, 2022), naming the American system (High School Diploma), the International Baccalaureate, the French Baccalaureate, the international British qualifications (IGCSE – A/AS Levels), and the International Arab Baccalaureate.

Referring to the situation described above, professional development programs have become more popular in the education sector. These programs are needed to reduce the learning loss due to the sudden lockdown and the teachers' strikes, and to preserve and/or improve the operational and educational standards in schools to meet the

specific standards required by the international systems. One of these systems that is operational in Lebanon since 2010 is the International Arab Baccalaureate (IAB). The IAB is an educational program for the secondary cycle. It is governed by a board in the UK and is implemented within the national curriculum and enriching it. This program comes with a professional development package for the teachers on the program requirements.

All initiatives on professional development required by international systems, and/or private institutions, and/or governmental organizations have the same goal to enhance students' learning (Darling-Hammond et al., 2017; Desimone, 2009). While the end goal is the student, the main target in the professional development is the teachers (Desimone, 2009; Garet et al., 2001). Professional development comes in different forms, formats, and designs. It could range from one-shot workshops to a series of lectures or one-to-one coaching, in addition to many other designs (Mizell, 2010). From the teachers' perspectives, what is the best design and format of professional development that could increase the efficiency of these programs, and hence would be reflected in their performance inside the classroom and improve their students' learning?

In reference to the above, the research questions that the researcher covers in this research study are as follows: From the perspective of IAB teachers, what are the characteristics of a successful professional development program? From the perspective of IAB teachers, what is the level of engagement in the professional development program designed with reference to the characteristics of a successful one?

2. Literature Review

2.1 Professional Development

Teachers' training and professional development are considered a central element in improving the teachers' capabilities in different areas, subject-specific knowledge, teaching and learning skills, and the applied aspect of teaching. These aspects are considered to reach the desired education standards (Boudersa, 2016). The main focus and end target of these programs is to equip students during their scholastic study years with the right skills to succeed and excel in their future academic journey and/or be prepared for the work market (Darling-Hammond et al., 2017). Professional Development programs are related to teachers' learning, learning how and what to teach, and transferring their knowledge to application for the benefit of the development and growth of their students (Darling-Hammond et al., 2017; Mizell, 2010). Moreover, professional development programs' audience can be teachers in-service or teachers in their study years (university level). To sum up, the importance of these programs is not limited only to teachers or those who attend and participate in the programs, but is also reflected in the students' performance and the reputation of the educational institution. In reference to Collin & Smith (2021). Designing and selecting an effective professional development should include the following four mechanisms: building knowledge, motivating teachers, developing teaching techniques, and embedding practices (Jensen et al., 2016). Darling-Hammond et al. (2017) described effective professional development as a program that respects the following elements: key content emphasis, active delivery, collaboration, practical and related to the field of work, coaching and mentoring, feedback and reflection, and an extended timeframe.

2.2 International Arab Baccalaureate

The International Arab Baccalaureate (IAB) is a comprehensive, high-level educational program created by the Educational Research Center (ERC) under the consultation of York Press – London, and is now owned by Academic Assessment Ltd- London. After years of research, planning, and preparation, the program was launched in the 2010-2011 scholastic year. The IAB is designed by Arab and foreign education experts to prepare students for different academic milestones and the job market in the future.

The IAB is designed to meet international standards and the requirements of the Arab world. It incorporates modern curricula, 21st-century skills, higher-order thinking skills, problem-based learning, and an interdisciplinary approach, which aligns with the latest research in educational development. In addition, the IAB promotes beneficial learning using current school resources away from the traditional method of memorization. It enables students to succeed in modern life according to the highest educational standards, as it meets the most stringent university admissions requirements while respecting the cultural and civilizational heritage of each country. The IAB is implemented in secondary grades and is based on the Profile Shaping Education (PSE) educational framework. The PSE encourages students to become "paradigmatic, productive, proactive, and principled - the ''4-P profile." (Halloun, 2010).

The IAB diploma has been found comparable to the British GCE A-Level by NARIC, the National Agency for the Recognition and Comparison of International Qualifications and Skills, which performs this official function

on behalf of the UK Government. The IAB also received a letter of recommendation from the "Scientific Society of Colleges of Education in Arab Universities," endorsing the deployment of the IAB program in the secondary cycle, following the educational requirements and the national programs of each country in the Arab world. To get the diploma, students have to pass a series of assessments measuring their knowledge and understanding, higher-order thinking skills, and the acquisition of transferable skills.

The IAB program also offers a professional development program for the IAB school teachers to ensure that the program is being delivered in the classroom for the students up to the required standards. The program covers lesson planning, integration of 21st-century skills in subject learning, and design of effective assessment.
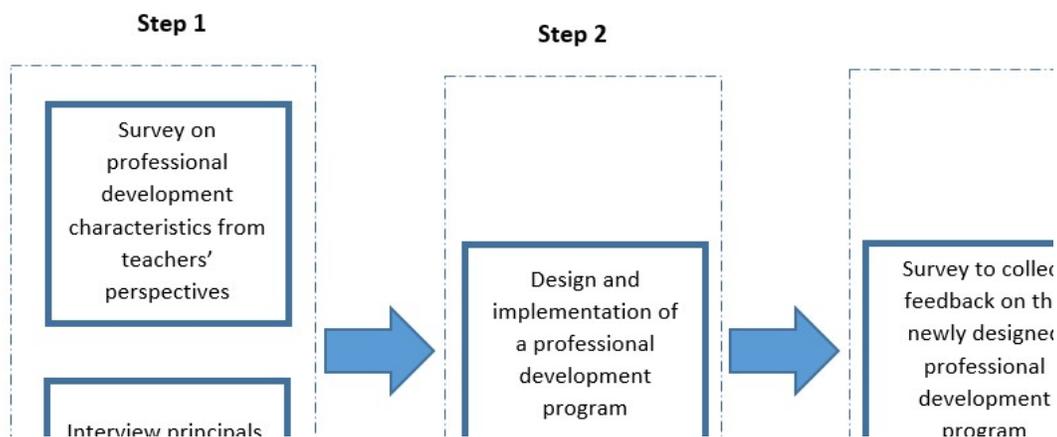

Figure 1. Illustration describing the methodology of work followed by the researcher in this study

Table 1. Internal consistency of the final version of the questionnaire I (piloting results)

	Number of Statements	Cronbach Alpha α (Pilot; N=25)	Cronbach Alpha α (Administered; N=94)
Questionnaire I	12	0.905	0.840

Table 2. Number of teachers who answered questionnaire I

Total number of participants					**94**
Gender	Male	41	Education Level	Bachelor	43
	Female	53		Masters	44
Subjects	Science Subjects	31		PhD	7
	Math	17		Others	0
	Languages	26	Years of Experience	Less than 5 years	9
	Others	20		Between 5 and 10 years	31
				More than 10 years	54

3. Methodology

In order to answer the research questions of this study, the researcher adopted the mixed approach. This approach is based on using both quantitative and qualitative techniques, simultaneously or sequentially, to answer the same or different research questions (Johnson & Onwuegbuzie, 2004). A mixed method approach was used for different purposes: (1) to use qualitative methods to explain quantitative results, (2) to use a theoretical perspective to guide the interpretation of results, and (3) to use qualitative and quantitative methods to

triangulate data.

This study is divided into three parts: pre-implementation of the professional development program, implementation of the professional development program, and post-implementation of the professional development program (Figure 1). The first part is designed to answer the first research questions. The researcher applied mixed methodologies in a simultaneous format. A questionnaire was distributed to collect quantitative data on the most important characteristics of the professional development programs from the teachers' perspectives in IAB schools. In addition, an interview was conducted with the principals to collect data on the current professional development programs in schools. The second part of the study is implementing the professional development program in reference to the data collected in the first step. The third part of the study is designed to answer the second research question. The researcher applied mixed methodologies in a sequential format. A questionnaire will be distributed to collect feedback on the professional development program designed in reference to the data collected in the part of the study. Two months after the end of the program, interviews were conducted with teachers who participated in the professional development program and filled in the questionnaire to compare the feedback received right after the professional development program.

3.1 Pre-implementation of the professional development program

In this step, the researcher aims to collect data on the characteristics of professional development that the teachers and school principals see as essential and important to include in the new design of the IAB professional development program.

A questionnaire is designed to collect data from the teachers in IAB schools. Seven IAB schools participated in this questionnaire in 2023. The final version of the questionnaire included two sections. The first section is related to demographics, and the second section is related to the different characteristics of an effective professional development program. As for the validity and reliability of the questionnaire, the researcher relied on previous studies in the field, had it reviewed by experts in the field, and piloted the questionnaire before implementation. Table 3.1 shows the value of Cronbach Alpha α calculated from the piloting. Cronbach Alpha α was also calculated after the administration of the questionnaire.

Table 2 shows the number of teachers who participated in Questionnaire I.

Through this questionnaire, the researcher aimed to answer the following hypotheses:

- H01: There is a statistically significant correlation between the content covered in the professional development and the effectiveness of the professional development for the teachers.

- H02: There is a statistically significant correlation between the way the professional development was developed and the effectiveness of the professional development for the teachers.

- H03: There is a statistically significant correlation between the combined variable of trainer role and origin and the effectiveness of the professional development for the teachers.

- H04: There is a statistically significant correlation between the presence of a follow-up component in the developed professional development and the effectiveness of the professional development for the teachers.

As for the interview in step 1, five principals from the seven IAB schools, whose teachers took the questionnaire, participated in the interviews. The final version of the interview includes 5 questions. Before the implementation of the interview, the questions were reviewed and validated by experts from the field.

3.2 Design and Implementation of the Newly Designed IAB Professional Development Program

Based on the data collected from step 1, IAB consultants and the operations team worked on redesigning the professional development program. The teachers of the six core subjects from the seven schools that participated in the questionnaire were invited to join and attend the program. Table 3 below shows the number of teachers who attended the professional development program.

3.3 Post-implementation of the professional development program

At the end of the professional development program, participants were invited to fill in a questionnaire to collect their feedback on the program. The final version of the questionnaire includes two sections. The first section is related to demographics, and the second section is related to different sessions presented in the design of the professional development program. As for the validity and reliability of the questionnaire, the researcher relied on previous studies in the field, had it reviewed by experts in the field, and piloted the questionnaire before

implementation. Table 4 below shows the value of Cronbach Alpha α calculated from the piloting. Cronbach Alpha α was also calculated after the implementation of the questionnaire.

In addition to the feedback on how teachers were engaged in the different sessions of the professional development program, the researcher addressed the following additional hypotheses:

- H05: There is a statistically significant correlation between the years of experience and the engagement of the teachers in the different sessions of the professional development program (lecturing, engaging presentation, and guided workshop).
- H06: There is a statistically significant correlation between the subjects the teachers teach and the engagement of the teachers in the different sessions of the professional development program (lecturing, engaging presentation, and guided workshop).
- H07: There is a statistically significant correlation between the teachers' educational level and the engagement of the teachers in the different sessions of the professional development program (lecturing, engaging presentation, and guided workshop).

As for the interview of step 3, 14 teachers, two teachers from each participating school, were interviewed. The final version of the interview included two questions. Before the implementation of the interview, the questions were reviewed and validated by experts from the field.

Table 3. The number of teachers who participated in the newly designed professional development program and answered the feedback questionnaire.

Total number of participants					87
Gender	Male	29	Education Level	Bachelor	52
	Female	28		Masters	29
Subjects	Science Subjects	32		PhD	5
	Math	17		Others	1
	Languages	28	Years of Experience	Less than 5 years	22
	Others	10		Between 5 and 10 years	28
				More than 10 years	37

Table 4. Internal consistency of the final version of the questionnaire (piloting results)

	Number of Statements	Cronbach Alpha α (Pilot; N= 25)	Cronbach Alpha α (administered; N= 87)
Questionnaire II	14	0.954	0.938

4. Results

The results are displayed in reference to the three steps listed in the methodology section.

4.1 Pre-implementation of the professional development program

In this section, the researcher lists the results of the analysis collected in step 1 of the study. Table 5 shows the frequency of the teachers' responses to Questionnaire I.

According to the above table, all responses were above the average (2.5) and ranged between 2.813 and 3.651. This reflects the importance of the characteristics mentioned in the questionnaire on the effectiveness of professional development programs. The fourth statement of the questionnaire obtained the lowest response rate value of 2.813 and the highest standard deviation value of 0.763. This statement is related to recruiting foreign experts to provide professional development programs. The sixth statement in the questionnaire obtained the highest response rate value of 3.651 and the lowest standard deviation value of 0.402. This statement is related to the trainers' mastery of the training material and their delivery of information.

In reference to Table 6, the researcher calculated the Spearman rho coefficient to accept or reject the hypotheses. The table below shows the value of the coefficient calculated.

In reference to the above table, H01, H02, and H04 are accepted; however, H03 is rejected.

Table 5. Descriptive analysis of the teachers' responses on questionnaire I

Statements	Likert Scale (1: Strongly Disapprove; 2: Disapprove, 3: Approve; 4: Strongly Approve)				Mean	Std. Dev.
	1	2	3	4		
1. Choosing the right time reflects positively on the participation of teachers.	%2	%2	%56	%40	3.325	0.644
2. Choosing the right place reflects positively on the participation of teachers	-	%7	%53	%40	3.325	0.605
3. The presence of appropriate resources for development within the school increases the benefit of teachers when they participate in professional development programs.	-	%2	%58	%40	3.372	0.535
4. Teachers feel more motivated to participate in professional development programs when the trainer is foreign.	%7	%19	%60	%14	2.813	0.763
5. Linking the training material to the current field reality by local experiences increases the effectiveness of training programs	%2	%2	%56	%40	3.325	0.644
6. The trainer plays an essential role in the delivery of information	-	-	%35	%65	3.651	0.402
7. Linking the content covered in successive training sessions increases the effectiveness of the professional development program	-	%5	%63	%33	3.279	0.548
8. The interconnection of the content covered in a training session increases the effectiveness of the professional development program.	-	%2	%58	%40	3.372	0.535
9. Addressing different dimensions (scientific, skills, and personal) in a professional development program adds to the experience of the teachers participating in it.	-	%2	%70	%28	3.255	0.492
10. The presence of hands-on activities in a professional development program increases the enthusiasm of teachers to participate in it.	-	%2	%56	%42	3.395	0.540
11. There is an equal importance between the theoretical and practical parts in the design of a professional development program.	-	%14	%49	%37	3.232	0.684
12. Complementing the professional development program with a follow-up section increases its effectiveness	-	-	%70	%30	3.302	0.464

Table 6. p-value for the hypotheses tested before the design of the professional development.

Hypothesis Tested	r_s (Spearman rho)	*p*-value	Interpretation
H01: There is a statistically significant correlation between the content covered in the professional development and the effectiveness of the professional development for the teachers.	0.812	0.037	rs > 0.8: strong positive correlation p-value < 0.05, correlation is statistically significant
H02: There is a statistically significant correlation between the way the professional development was developed and the effectiveness of the professional development for the teachers.	0.335	0.028	0.2<rs<0.4: weak positive correlation p-value < 0.05, correlation is statistically significant
H03: There is a statistically significant correlation between the combined variable of trainer role and origin and the effectiveness of the professional development for the teachers	0.283	0.065	0.2<rs<0.4: weak positive correlation p-value > 0.05, correlation is not statistically significant
H04: There is a statistically significant correlation between the presence of a follow-up component in the professional development developed and the effectiveness of the professional development for the teachers	0.283	0.046	0.2<rs<0.4: weak positive correlation p-value < 0.05, correlation is statistically significant

Table 7. Implementation details of the newly designed IAB professional development program

	Date and time	Location
Session 1 *(+ tour at the bookshop)*	Saturday 11 September 2023 10:00 a.m. – 12:00 p.m.	Educational Research Center offices – Zouk Mosbeh
Session 2	Saturday 28 October 2023 8:30 a.m. – 10:30 a.m.	Educational Research Center offices – Zouk Mosbeh
Session 3	Saturday 28 October 2023 11:00 a.m. – 1:00 p.m.	Educational Research Center offices – Zouk Mosbeh
Follow-up	Written feedback on the attendees' work: within 72 hours of receiving the lesson plan Periodic visits to schools: 1 visit per month	In schools

Table 8. Participation rate of the teachers in the professional development program

	Invited to participate	Answered Questionnaire I	Attended on Day 1	Attended on Day 2	Answered Questionnaire II
Number of Teachers	107	94	91	88	87
Rate		87.85%	96.80%	96.70%	98.86%

Table 9. Descriptive analysis of the teachers' responses to questionnaire II

Evaluation of session #1 of the newly designed IAB professional development program. 1 indicates the lowest mark, and 5 indicates the maximum score.	1	2	3	4	5
Content presented in this session	1%	3%	21%	47%	28%
Importance of session #1 in supporting the next sessions in clarifying the framework of the program	1%	1%	26%	51%	21%
Presenter's performance in delivering the content of session #1	1%	-	10%	43%	45%
Importance of the examples presented during session #1	2%	7%	21%	44%	25%
Design of the presentation in terms of clarity and adequacy	2%	2%	21%	51%	23%
Diversity of examples and resources used by the presenter in session #1	5%	15%	21%	47%	13%
The time allocated to session #1	-	8%	22%	38%	28%
Evaluation of session #2 of the newly designed IAB professional development program. 1 indicates the lowest mark, and 5 indicates the maximum score.					
Importance of session #2 in supporting the next session and in the application of what has been covered in session #1.	6%	3%	17%	41%	29%
Trainers' ability to adopt a systematic approach and assist in the application activities of session #2	1%	3%	17%	39%	36%
Importance of the templates and samples presented in session #2	1%	6%	24%	39%	26%
The time allocated to session #2	1%	6%	17%	43%	25%
Evaluation of session #3 of the newly designed IAB professional development program. 1 indicates the lowest mark, and 5 indicates the maximum score.					
Importance of session# 3 in building the attendees' capabilities in replicating the practice in the schools.	5%	5%	18%	33%	32%
Trainers' capabilities in following up on the progress and supporting the teamwork	1%	7%	16%	38%	31%
The time allocated to session #3	1%	7%	22%	37%	24%

Table 10. p-value for the hypotheses tested after the administration of the professional development.

Hypothesis Tested	r_s (Spearman rho)	*p*-value	Interpretation
H05: There is a statistically significant correlation between the years of experience and the engagement of the teachers in the different sessions of the professional development program (lecturing, engaging presentation, and guided workshop).	0.215	0.046	$0.2<rs<0.4$: weak positive correlation p-value < 0.05, correlation is statistically significant
H06: There is a statistically significant correlation between the subjects the teachers teach and the engagement of the teachers in the different sessions of the professional development program (lecturing, engaging presentation, and guided workshop).	0.120	0.267	$rs<0.2$: very weak positive correlation p-value > 0.05, correlation is not statistically significant
H07: There is a statistically significant correlation between the teachers' educational level and the engagement of the teachers in the different sessions of the professional development program (lecturing, engaging presentation, and guided workshop).	0.103	0.342	$rs<0.2$: very weak positive correlation p-value > 0.05, correlation is not statistically significant

As for the interviews conducted, the interviewees agreed that the benefits of professional development are on two levels: the learning level and the institutional level. At the learning level, the interviewees agreed that the programs should include a bouquet of skills to be developed and categorized under three groups: teaching skills, which include up-to-date proven educational approaches and methodologies, personal skills aimed to improve communication with the new generation, and skills related to technology, which is becoming an essential element in education. They also agreed that these skills can be covered in programs addressed to teachers

regardless of the subject they teach, although each subject has its particularities. Regarding the factors that affect the success of a program, the interviewees agreed that the most important factor is the way the material of a program is delivered. It should be active, relevant, practical, and applicable. Regarding the time, place, and the trainer, the interviewees found these factors to be less important than the content and how it is delivered. The ranking of these factors differs from one interview to another.

4.2 Design and Implementation of the Newly Designed IAB Professional Development Program

IAB trainers and the operations team reviewed the results of step 1 to plan and design the IAB professional development for lesson planning. The plan includes the main objectives of the program, sessions to be delivered, details of each session, time of implementation for each session, IAB staff responsible for each task related to the sessions, and references to the results from step 1.

The exact date of implementation and the venue of the sessions were discussed with the principals of the participating schools. The statements related to time and location scored high in the questionnaire distributed in step 1 (Table 7). The implementation of the professional development program took place during the academic year 2023 – 2024.

Teachers showed commitment to participate in both days of the professional development program. Table 8 shows the rate of teachers' participation in all the steps of the study.

4.3 Post-administration of the professional development program

Table 9 shows the frequency of the teachers' responses to Questionnaire II.

The results show that more than 60 % of the attendees gave a score of 4 or 5 to the statements related to the three sessions of the professional development program. The statements are related to the content presented, the delivery method, the trainer(s), and the duration of each session. The descriptive statistics show that the attendees benefited from the newly designed professional development program and found it efficient.

To accept or reject H05, H06, and H07, the researcher calculated the Spearman rho coefficient. Table 10 shows the coefficient value and the p-value calculated.

In reference to the above table, H05 is accepted, and H06 and H07 are rejected. As for the interview feedback post-training, most of the teachers agree that the main added value of the training was modelling how to organize, prepare, and enrich the lessons. They also found it easy to follow the steps of lesson planning covered with the samples and templates provided. A couple of teachers found that there was no added value since it did not cover any new material for them. Most teachers agreed that the availability of additional resources in the classroom would have enhanced the application of what was covered in the classroom. The resources that the teachers named are the internet connection in the classroom and the media repository related to the curriculum content.

5. Discussions

In reference to the results of Step 1: Pre-Implementation of the Professional Development Program, the content, delivery method, and complementary follow-up program are considered important factors in designing an effective professional development program. It is worth noting that the significant correlations between the effectiveness of the professional development and how it is developed, and the complementary follow-up program are weak. This indicates that the method of development alone does not strongly determine outcomes. Instead, the relevance and quality of the PD content appear to play a more influential role. This finding is consistent with previous research highlighting that professional development programs are most effective when they focus on relevant instructional content and directly address teachers' classroom needs (Desimone, 2009; Darling-Hammond et al., 2017; Garet et al., 2001). The weak correlation also indicates that no follow-up program has a positive influence on the outcome of a professional development program, unless it is sustained and well-structured. Effective professional development requires continuous follow-up and coaching to ensure the transfer of newly acquired skills into classroom practice (Joyce & Showers, 2002). However, the trainer's nationality and background are not key factors in the professional development effectiveness. Hence, designing a successful professional program is a complex task, and multiple characteristics should be taken into consideration. This coincides with research and studies on the importance of professional development for teachers and how teachers learn (Darling-Hammond et al., 2009; Guskey, 2002; Mizell, 2010). The results also coincide with Desimone (2009) who suggests in her research that local experts can often be more impactful than external experts. Based on the divergent views regarding the trainer's mastery level, international expertise, and nationality, a balanced approach between global insights and what has proven to be

successful internationally with the local context is suggested to be adopted by the trainer. In addition, as the study was limited to a one-month follow-up period, future longitudinal research is recommended to examine the long-term effect of a professional development program.

In Step 2: Design and Implementation of the Newly Designed IAB Professional Development Program, the IAB trainers and operations team worked on the data collected and designed a program that fits the qualification program needs and the teachers' needs. The professional development program focused on one concept (lesson plans) and included hands-on activities related to the subjects taught. The teachers' attendance rate between day 1 and day 2 of the program was above 96%, and the response rate on Questionnaire II was above 98%. These rates show that the design of the professional development program is an important factor in getting a high participation and engagement rate. Research confirms that when teachers' opinions and feedback are taken into consideration in designing any professional development activity, they are more likely to feel valued and motivated to participate and engage in these activities (Darling-Hammond et al., 2017). This also aligns with Knowles' theory of andragogy. This theory highlights the importance of addressing adult learners' preferences and self-directedness (Knowles, 1980). The professional development providers would have more insights into the teachers' learning preferences when they are asked to share feedback about design and format. Providing programs that are aligned with the teachers' preferences would lead to a more engaging experience. In addition, the attendance of the teachers on both days shows that teachers would remain engaged throughout the professional development program when the sessions are consistent and relevant. This coincides with the study conducted by (Borko (2004), stating that the design of the professional development activities or events should be focused, coherent, and context-specific to maximize teachers' participation and engagement throughout the full development program. The professional development providers should avoid isolated topics when preparing their offerings, and they should focus on thematic or scaffolded learning experiences.

Results of Step 3: Post-Implementation of the Professional Development Program. Moreover, show that certain variables, such as the subject taught and the educational level of teachers, do not have any significant impact on the level of participation and engagement of teachers in professional development activities. However, the results show that there is a significant relationship between teaching experience and the teacher's engagement in professional development, yet the positive correlation between these two variables is weak. This indicates that more experienced teachers are slightly more likely to engage in a professional development activity. This coincides with Guskey (2002) listing that experienced teachers can overcome challenges faster and more efficiently than less experienced teachers. Experienced teachers have faced multiple and different challenges while in the professional field. However, the weak correlation indicates that experienced teachers may show lower engagement in generic professional development sessions, particularly when such sessions are perceived as lacking relevance or adding to their workload without clear added value. This interpretation is consistent with findings from Synder (2017), who reported that more experienced teachers often show lower engagement in professional learning when the content does not directly address their instructional challenges or context. On the other hand, Kennedy (2016) states that well-designed professional development content should be built on prerequisites regardless of whether the audience is composed of experienced or new teachers. All teachers are said on all accounts to benefit from PD, which is applicable, consistent, and contextualized.

6. Conclusion

In conclusion, designing effective professional development is important for teachers to improve their learning and practices, which reflect on students' learning. This study shows that the design of professional development programs should follow a multi-faceted approach by engaging teachers from the start and covering the factors that have an impact on the effectiveness of a PD program, such as the content tackled and its relevance, the delivery method, and the presence of a follow-up element. Considering these increases the engagement and participation rate of the teachers in professional development programs.

These findings inform the organizers and designers of professional development programs on the important elements and factors to optimize the benefits. This role can be played by an external agent in schools through the representatives of the international programs adopted. In the case of this study, it is the operations team of the International Arab Baccalaureate that increasing teachers' capabilities is one of its pillars. The team structures and implements PD programs in reference to the teacher's needs, and then follows up to ensure that the objective is well-acquired and that the change is happening.

References

Borko, H. (2004). Professional Development and Teacher Learning: Mapping the Terrain. Educational Researcher, 33(8), 3–15. https://doi.org/10.3102/0013189X033008003

Boudersa, N. (2016). The Importance of Teachers' Training and Professional Development Programs in the Algerian Educational Context: Toward Informed and Effective Teaching Practices. Expériences Pédagogiques, 1. http://exp-pedago.ens-oran.dz-

Collin, J., & Smith, E. (2021). EFFECTIVE PROFESSIONAL DEVELOPMENT - Guidance Report. Education Endowment Foundation.

Coury, G. (2022). When Education Falls to Necessity: Lebanese Education Amid Economic Downturn. Harvard International Review. https://hir.harvard.edu/when-education-falls-to-necessity/

Darling-Hammond, L., Hyler, M., & Gardner, M. (2017). Effective Teacher Professional Development. Learning Policy Institute. https://doi.org/10.54300/122.311

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). Professional Learning in the Learning Profession: 36.

Desimone, L. M. (2009). Improving Impact Studies of Teachers' Professional Development: Toward Better Conceptualizations and Measures. Educational Researcher, 38(3), 181–199. https://doi.org/10.3102/0013189X08331140

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What Makes Professional Development Effective? Results From a National Sample of Teachers. American Educational Research Journal, 38(4), 915–945. https://doi.org/10.3102/00028312038004915

Guskey, T. R. (2002). Professional Development and Teacher Change. Teachers and Teaching, 8(3), 381–391. https://doi.org/10.1080/135406002100000512

Halloun, I. A. (2010). Profile Shaping Education.

Jensen, B., Roberts-Hull, K., & Hunter, A. (2016). Beyond PD: Teacher Professional Learning in High-Performing Systems. The National Center on Education and the Economy.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. Educational Researcher, 33(7), 14–26. https://doi.org/10.3102/0013189X033007014

Joyce, B., & Showers, B. (2002). *Student achievement through staff development* (3rd ed.). Association for Supervision and Curriculum Development.

Kennedy, M. M. (2016). How Does Professional Development Improve Teaching? Review of Educational Research, 86(4), 945–980. https://doi.org/10.3102/0034654315626800

Knowles, M. (1980). The Modern Practice of Adult Education: From Pedagogy to Andragogy (revised and updated). Cambridge, The Adult Education Company.

Lebanon: Education at a Tipping Point—Education Sector Advocacy Brief. (2021). [Analysis]. Education Cluster, UNICEF.

Lebanon: Planning Lapses Endanger School Year. (2021, November 10). Human Rights Watch. https://www.hrw.org/news/2021/10/11/lebanon-planning-lapses-endanger-school-year

Mizell, H. (2010). Why Professional Development Matters. Learning Forward.

Rahhal, N. (2020). The impact of Lebanon's economic woes on schools and parents. Executive. https://www.executive-magazine.com/economics-policy/the-impact-of-lebanons-economic-woes-on-schools-and-parents

Statistical Bulletin—Academic Year 2018/2019. (2019). [Statistics]. Center for Educational Research and Development (CERD).

Snyder, R. (2017). Resistance to change among veteran teachers: Providing voice for more effective engagement. NCPEA International Journal of Educational Leadership Preparation, 12(1). https://files.eric.ed.gov/fulltext/EJ1145464.pdf

Joe Ephrem (ORCiD: 0009-0008-2817-8982): Joe Ephrem holds a Master's in Educational Management. He began his career as a part-time junior editor at a leading publishing house in Lebanon and the Arab World. He currently serves as the Assessment Manager at York Press Limited, leading assessment projects for both public and private sectors in countries where York Press operates. With nearly a decade of experience working on educational projects across the Arab region—including Lebanon, Saudi Arabia, Oman, and Egypt—Joe has developed a strong track record in educational assessment and development. He is a MEPLI Fellow (2022) and holds a Certificate in Advanced Educational Leadership (CAEL) from the Harvard Graduate School of Education. He has also been awarded an Executive Certificate in Leadership from the American Foundation of Educational Excellence (AFEE). Over the years, he has participated in various World Education Summits, representing York Press in countries such as Oman, the UAE, Qatar, Egypt, and Lebanon. Joe is most inspired when traveling and continuously expanding his expertise in the educational field.

Bassem Kandil: Dr. Bassem Kandil is an Associate Professor in the Faculty of Education at Saint Joseph University of Beirut. Dr. Kandil teaches a variety of courses, covering Classroom Assessments, Data-driven decision-making, Quantitative and Qualitative Research methodologies, and quality assurance in education. His role as the head of the department also entails that he does regular evaluations of the various courses offered, as well as the relevant programs. Dr. Kandil has also provided consultancy services that contributed to numerous national-level projects. Passionate about advancing educational standards, Dr. Kandil is dedicated to promoting a culture of continuous improvement through innovative practices and evidence-based decision-making.