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Framing the Effects of High-Impact Practices from a High-Impact Learning Perspective. A Review of Studies

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Abstract

Due to developments in information and communication technology, increasing knowledge production in the economy, globalisation and changes in professional structures and expectations, the call for reshaping education to increase its impact in terms of value for societal demands has become acute. In addition, many scholars have formulated criticisms on the low impact of education and higher education specifically. For this reason, it is of great importance for higher education institutions and colleges to offer their students an educational programme providing them with the basic skills and competences they can adapt to the globalising, fast and constantly changing world and meet the needs of the business life. The aim of this study is to determine the roles of seven High-impact Learning that Lasts (HILL) building blocks (urgency, learning agency, collaboration and coaching, action and knowledge sharing, flexibility, hybrid learning, and assessment as learning) in the effects of high-impact practices (HIPs). After analysing the 56 selected studies by narrative analysis, it was determined that almost all of the effects of HIPs (collaboration, personal growth and social development, communication, enhanced learning, appreciation of diversity, student-faculty/peer/community interaction, critical thinking, motivation, academic success, retention and/or engagement, job-readiness skills, knowledge transfer, positive learning environment, meaningful education opportunities, sense of belonging and institutional acceptance, problem solving, being a leader of one's own learning, social responsibility, career related opportunities, leadership skills, being aware of one's own skills/abilities/beliefs) were supported and strengthened by the seven HILL building blocks. To conclude, the application of the HILL building blocks will make the HIPs more applicable and effective.

Keywords

High-Impact Learning That Lasts, HILL Model, High-Impact Practices, HIPs, Higher Education

1. Introduction

Recent developments in information and communications technology, globalisation and new professional structures have led to the urge to increase the impact of learning programmes in terms of value for societal demands (Cornali, 2012; OECD, 2016). Also, science had clearly formulated criticisms on older approaches to learning stressing memorization and more generally the low impact of education and higher education specifically. Arum & Roksa (2011) evaluated students' learning using the performance task of the Collegiate Learning Assessment (CLA), which aims to measure competences based on general university skills such as critical thinking, analytical reasoning, and written communication in their study. It was determined that most students' achievements in critical thinking, complex reasoning and writing were either excessively small or empirically nonexistent. Moreover, while 45% of students did not show significant improvement in learning in the first 2 years of college, 36% of students did not show significant improvement in learning considering 4-year college as measured by CLA performance. Students who scored an average of 50% in freshman year rose to just 68% after 4 years of college. Also, according to Tynjälä, Slotte, Nieminen, Lonka, & Olkinuora (2006), although those taking active roles in working life are satisfied with the general knowledge mastery that their university education has brought them, they stated that they have learned the skills they need in business life while working. In addition, most of the graduates think that they do not have enough experience in social skills and interaction with clients during their university years. In the same vein, research on outcomes of education, particularly at tertiary level, has shown that there is a gap between the knowledge needed on the job and the knowledge and skills produced through formal education (Tynjälä, 2008). This is also confirmed by Mulder (2012). He underlined that the structural mismatch between the world of education and training and the world of business and society will grow. In order to prepare students for the competition and expectation in the globalising world, more emphasis should be placed on the ability to develop the competences required in the dynamic society of the future in learning programmes.

The plea to reshape learning and education and the criticisms on current education lead to the question: What does the educational system need to reorganise in its approach to what colleges and universities can do to promote high-impact learning, in other words, what does the educational system need to support students to learn more effectively in terms of being able to respond to the expectations of working life and society more in general (being able to pro-

duce solutions to problems, being flexible to deal with change, being open to communication and collaboration...)?

Colleges and higher education institutions, whose primary goal is to equip students with domain-specific competences and enable students to take an active role in society, cannot confine their services to a traditional classroom setting where the teacher constantly transfers knowledge to the passive learners. In the study conducted by Deslauriers, Schelew, & Wieman (2011) in a large-enrollment physics class at the undergraduate level, students' learning amounts were compared under controlled conditions. The study showed that the learning amounts of the students attending the courses which were taught by a trained but inexperienced instructor using research-based instruction were more than twice that of the students attending the courses taught by an experienced, highly rated instructor using the traditional lecture approach. In addition, increased student attendance and engagement were listed as identified outcomes of research-based instruction. As Dochy & Segers (2018) stated, "working in teams, lifelong learning, perseverance, critical thinking, entrepreneurship, creativity, knowledge creation and problem solving, accuracy, engagement and self-responsibility" are the competences prioritised by the labour market (5). In this respect, Miller, Rycek, & Fritson (2011) and Millea, Wills, Elder, & Molina (2018) emphasised in their studies that the expectations of students from learning programmes are not that different from the expectations of the labour market. In order to support learners in the development of these competences, many studies have been arguing on the relevance of different features of the learning environment that support and facilitate learners.

As an attempt to integrate insights on how to support impactful learning focusing on high-impact instructional techniques and designs, in 2008, Kuh presented ten so called "key high-impact learning practices" known as increasing student retention and improving student engagement for higher education. In 2016, as an eleventh high-impact practice, ePortfolios were added to the list (Watson, Kuh, Rhodes, Penny Light, & Chen, 2016). They are identified as: first-year seminars and experiences, common intellectual experiences, learning communities, writing-intensive courses, collaborative assignments and projects, undergraduate research, diversity and global learning, service learning (community-based learning), internships, capstone courses and projects and e-Portfolios.

To briefly explain, first-year seminars and experiences refer to regular meetings of small student groups with faculty or staff that emphasise skills, such as critical inquiry, frequent writing, information literacy, collaborative learning to develop students' intellectual and practical abilities (Kuh, 2008). Common intellectual experiences combine the knowledge gained from various previously studied core courses through using broad themes, such as technology, society, unemployment (Alias & Aris, 2016; Kuh, 2008). In learning communities, students are expected to take two or more connected courses while working as a group with their professors to encourage the integration of learning across courses and to encourage students to think beyond the classroom walls. The aim of writing-

intensive courses is to produce and examine a variety of writing styles for different audiences in different disciplines, at all teaching levels and across the curriculum, including senior year projects (Kuh, 2008). The aim of collaborative assignments and projects practice including study groups, team-based assignments and writing is to learn to work with people in other companies and to solve problems, to sharpen one's own understanding by taking the opinions of others seriously (Kuh, 2008). Undergraduate research includes activities leading students to make empirical observations, collect data, and communicate with community members to document this data (Kuh, 2008; Knouse, 2018). Diversity and global learning contains studies helping students observe different cultures, life experiences and worldviews, often while investigating global issues, such as socio-cultural diversity, religious, ethnic and gender inequality or the environment, security, freedom and global peace (Alias & Aris, 2016; Kuh, 2008). Service learning is a credit educational experience in which students participate in an organised field activity meeting identified community needs, thereby better understanding the course content and developing an enhanced sense of civic responsibility (Bringle & Hatcher, 1995). Internship aims to provide students with direct experience in career-related fields with the supervision and coaching of professionals in the field. In this way, while students have the opportunity to get to know the professions, they also discover their career preparation skills (Kuh, 2008; Sgroi & Ryniker, 2002). In capstone courses and projects, students create a project by integrating the knowledge and skills they have acquired during their university years. This project can be a research paper, a performance, a portfolio of best work, an art exhibition, a creative project, a presentation, reflections, or the creation of an innovative product or service (Kuh, 2008; Pierce et al., 2019). The final practice, the ePortfolio, gives students the opportunity to electronically collect their work over time, reflect on their personal and academic progress, and share selected items with potential employers, advisors and professors.

Many studies conducted in higher education show that HIPs—whether they are applied separately or in various combinations—have positive effects on a learning process. To illustrate, according to Eynon & Gambino (2017), by linking guided reflection and networked digital technology, ePortfolios make student learning more recognisable and unified. Additionally, Pascarella, Palmer, Moye, & Pierson (2001) stated that there was a statistically significant increase in the critical thinking skills of students who participated in diversity experiences during their university education. It was also stated in the study of Wismath & Newberry (2019) that the first year seminars offer a campus-wide learning environment which not only support network but also allow for student growth and learning while working collaboratively. To Miller et al. (2011), undergraduate research and internships create intrinsic interest since they are based on the research, including academic effort, active participation, collaborative learning and relevance. The positive effects of service learning, diversity experiences, and internships were noted by Farrow & Burt (2018) as allowing students to connect

with on-campus and off-campus learning. It was remarked in the study of Kilgo, Ezell Sheets, & Pascarella (2015) that HIPs can be defined as pathways to student success as they encourage critical thinking, need for cognition and intercultural effectiveness. Additionally, Wu & Park (2019) announced that students attending HIPs gain deeper learning opportunities, better attitude towards interacting with staff and fellow classmates.

In addition to the aforementioned contributions of HIPs to the learning process, specific features of the learning environment foster learning. According to Millea et al. (2018), shared lessons or experiences can increase student success as they integrate students with the university community. Additionally, Kuh, Pace, & Vesper's (1997) study showed that collaboration and active learning among students are the best predictors of achievement at baccalaureate, master's, and doctoral-granting institutions for both men and women. The study showing the positive effects of hybrid learning belongs to Dochy, Gijbels, Segers, & Bossche (2021b). They mentioned that the current working systems including professional learning and development activities take place in a more hybrid work environment where training, exchange of ideas with colleagues, informal networking activities, online learning modules and coaching are combined with ever-changing project teams. Therefore, this should be reflected in how learners are supported in higher education, more specifically an application of hybrid learning. Finally, as Tynjälä (2008) argued, education and business life are intertwined. Combining formal and non-formal learning is a basic prerequisite for the formation of new types of expertise needed in response to new expectations in working life.

Besides, in recent years, new perspectives on learning such as Engeström's expansive learning theory (Engeström & Sannino, 2010; Dochy, Engeström, Sannino, & Meeuwen, 2021a), Siemen's connectivism theory (Siemens, 2005), Semler's philosophy (Semler, 1993) and Lumiar approach (Groff, 2013) have paved the way for the emergence of so-called "hybrid expansivism". According to "hybrid expansivism", learning for the future should have the following characteristics:

- Learning is also expansive learning: learning to create new knowledge is important.
- Learner agency is key to learning processes.
- Learning is hybrid: an alternation between digital and face-to-face learning.
- A certain balance between formal (structured) learning and informal learning (a wide range of more unstructured ways of learning supported by technology and enhanced by social networking)
- A balance between acquiring basic knowledge and generic competences
- Learning is collaborative and largely self-directed.
- Learning is based on continuous feedback (Assessment as Learning) (Dochy et al., 2021b: p. 10).

Based on the analysis of review studies and on recent perspectives on learning, Dochy and Segers have developed the High-Impact Learning that Lasts (HILL)

model to bring together the scattered evidence on features of the learning environment enhancing impactful learning. They brought together the results of their analysis in seven building blocks, in other words, seven main features of a learning environment, called "urgency", "learner agency", "action and knowledge sharing", "collaboration and coaching", "hybrid learning", "flexibility", and "assessment as learning", needing to be in place to harness the lasting impact of learning processes.

While research on high-impact practices continues to expand its boundaries across disciplines, it has become more important to detect the factors that fuel the positive effects of these high-impact learning practices on student learning. The aim of this article is to review current research on high-impact practices (HIPs) and theories to respond to the current lack of integration and to frame these HIPs within the HILL model to better understand which features of the learning environment contribute to the impact of the HIPs. This will lead to the development of a model showing which HILL building blocks govern the relationships between modes of HIPs and proven effects. To sum up, the main research question addressed in this review study is: Which HILL building blocks explain the effects of high-impact practices in the learning environment?

2. Theoretical Framework

2.1. High-Impact Learning

The purpose of High-impact Learning is to provide a framework highlighting which features of the learning environment need to be implemented to ensure that learning outcomes are realised in a sustainable way. It encourages students to discover and create new information, to make connections across the curriculum, to recognise perspectives and ideas other than their own, and to think critically (Murphrey, Odom, & Sledd, 2016). According to Dochy & Segers (2018), impactful learning is "engaging in learning activities that contribute to the development, fine-tuning, broadening and deepening of knowledge, skills and attitudes and, in turn, supports the learner/employee to create or increase significant and unique value for his/her job and the organisation" (13).

After the 1990s, the developments in the field of technology made different cultures, geographical borders, and exchanges between people closer and more accessible. Following this change, rapid developments in the field of information and communication started affecting every field, such as health, production and transportation, while also changing the expectations of business life. All these new developments and expectations have given rise to new perspectives on how future learning should be. Dochy and Segers (2018) explained the features of future learning as follows:

- Learning is an active process: Learning outcomes are directly dependent on the activities of learners. Making sense of the information received, communicating, problem solving, working as a team are activities learners should perform by themselves. Learners need space to take responsibilities for their

learning and urgency.

- Learning is cumulative: Learners associate new information with what they already know and interpret it based on their own prior knowledge framework. In this way, learners make sense of new information. Since new knowledge builds on existing knowledge, the goal should be to strive for active knowledge construction.
- Learning is a constructive process and expansive: The active transfer of new information to already known knowledge creates a well-organized knowledge base. Thanks to flexible use in a wide variety of fields, new and stronger complex relationships are established between concepts. Also, in a rapidly changing society, many questions that have not yet been answered are encountered. For this reason, people and institutions have to learn many things that are not yet defined or understood. Teachers should now have the mission of continuous self-development and coaching the learners at the same time.
- Learning is context-related: It is not automatically available for use in the workplace context learners learn during training. For this reason, to use newly acquired knowledge and skills in new contexts, learners should be provided with a variety of authentic learning tasks in which they can experience identical thinking processes in real life.
- Learning is chaining constructive conflicts and challenge: The questions of "why" and "how" trigger learning the most. This can be accomplished with an urgent need and agency. Urgency triggers learning when a learner experiences a gap in knowledge and skills or a misunderstanding. In addition, learners are encouraged to learn when they identify the task or assignment as their own problem. If learners formulate the task themselves, they start seeking solutions, which leads them to effective learning.
- Learning is a matter of perseverance in working: A learning track should encourage learners to repeatedly use certain knowledge, skills, and attitudes in a variety of situations to find out in what situation and under what circumstances certain knowledge, skills, and attitudes are useful.
- Knowledge arises and develops in teams and groups: The fact that the problems encountered today do not have direct solutions and that their complexity must be solved by a different group of people with a collaborative approach has made group work or cooperative learning a prerequisite rather than an option. At the same time, insights are developed through collaboration with colleagues and coaches. In this way, while learning collaboratively, learners can evaluate their own thoughts and insights through discussions with others.
- Learning is self-directed and pursuing your own goal: Learning happens when learners know what they want and constantly monitor whether their activities are having the effect they expect. Learning is enhanced by the learner's full responsibility and participation. Ongoing participation should

be supported by recognition, positive feedback and encouragement.

The rapidly changing and developing environment needs individuals who can constantly renew themselves, adapt to innovations, analyse the current situation and produce solutions to problems by communicating with their environment. For this reason, continuous learning is an important key in mastering and developing the competences of individuals in order to meet the expectations of the current and future working life. Due to all the above-mentioned features, it is of great importance that training programs produce content that will meet the demands of business life and keep impactful learning alive.

As a solution to all the aforementioned expectations and challenges, Dochy & Segers (2018) proposed the High-Impact Learning that Lasts (HILL) model, based on many scientific review studies of the past 2 decades. To improve the impact of a learning program, HILL provides a framework for rethinking the program and analysing the way one works with a view to increasing the impact of one's investments. The HILL model consists of seven building blocks showing no hierarchical relationship as a guideline to encourage and facilitate effective learning (**Figure 1**).

They are briefly summarised by Dochy & Segers (2018) as below:

1) **Urgency:** It is the starting point of learning. There is a situational interest. For instance, a problem needing to be solved or a request requiring immediate action (Hidi & Harackiewicz, 2000). In addition, there is an individual interest. In other words, it is a phenomenon you cannot give a full answer to, but encouraging you to learn by attracting your interest and curiosity.

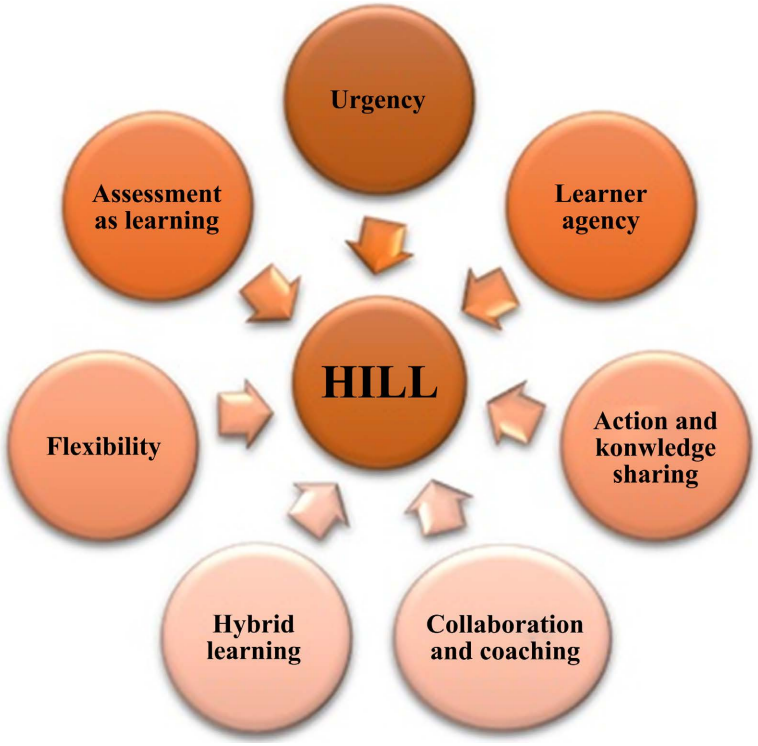

Figure 1. The building blocks of the HILL model.

2) **Learner agency:** You are in control of your learning process. You are the one making the best decision and timing for your own development. The learning journey made under your own entrepreneurship and leadership will bring the most permanent and effective learning. According to Sitzmann & Ely (2011), learners exhibiting a high degree of self-regulation in their learning process learn more than those who do not take responsibility.

3) **Action and knowledge sharing:** Experimentation is the most effective way to learn. If this process is supported by teams and groups, it becomes much more effective. Since learning is more practice-oriented, practical experiences increase the motivation of learners (Baeten, Dochy, & Struyven, 2013; Mulder, 2012). Authentic situations not only increase motivation, but they are also much more effective in terms of learning competences than a lesson taught by traditional examples as they are a slice of reality. This block enables learners to build knowledge collaboratively and develop understanding through active participation. This ensures that learning takes place when there is a task to be done or a problem to be solved, that is, at the exact time it should be. Action and knowledge sharing engages students in action, allows them to make mistakes, and creates opportunities to get immediate feedback and learn from it.

4) **Collaboration and coaching:** Learning is a process and action enriched not by yourself, but by interactive sharing and collaboration with your friends, coaches, customers, managers and so on. Many studies show that learners working in collaborative learning environments outperform learners working in individual learning environments (Bowen, 2000; Johnson & Johnson, 2009; Timmers, Dochy, & Cascallar, 2013). By sharing and discussing your opinions, thoughts and ideas, you can see your deficiencies and gaps more clearly. All kinds of collaboration with your teammates, such as being appreciated and/or criticised, research, and information sharing will mature and develop you in your learning journey.

5) **Hybrid learning:** It is a well-planned mix encompassing online and offline learning. In online learning, synchronous communication tools, such as live chat and video conferencing, and asynchronous communication tools, such as discussion boards, chat, e-mails can be used. In offline learning, face to face meetings, printed materials can be used. With hybrid learning, the barriers of traditional learning and pure e-learning, such as a feeling of isolation and loss of interest in the subject matter can be overcome (Liu et al., 2016). Additionally, since participants feel more free and also safer to say what they think and share their reflections, the online component of hybrid learning facilitates not only more effective and in-depth communication, but also more open communication in online community. Furthermore, improved social cohesion, independent/self-regulated learning, supporting learners' problem solving and communication skills are among the identified benefits of hybrid learning (Hsieh, Lou, & Shih, 2013; Poon, Royston, & Fuchs, 2010).

6) **Flexibility:** Allowing some flexibility in learning and being open to informal learning in the daily training and work situation can be very effective and

necessary to further develop professional expertise (Doornbos, Denessen, & Simons, 2004; Illeris, 2002). According to Marsick & Watkins (2001), informal and incidental learning is less structured and the control of learning is mainly in the hands of the learner. Informal learning is self-directed and therefore tailored to the individual learning. Learning does not always have to be intentional and can just as easily be a by-product of another activity the learner is doing. The learner may not always be aware of certain learning processes. Reflection can then bring these learning processes to a conscious level so that the contribution of the learning process is even greater and transfer to other situations is also possible.

7) **Assessment as learning:** As Birenbaum & Dochy (2012) emphasised the traditional assessment approach mainly focuses on testing basic skills that are supposed to be acquired through boring activities and repetitions of what is taught in class or in the textbook. In addition, the development, scoring and interpretation of tests for the purposes of accountability are done by measurement experts using complex psychometric models. Under these conditions, tests that best measure low-level cognitive competencies and are usually applied as multiple choice, true/false or matching items are used as common assessment tools. According to Birenbaum and Dochy (2012) this assessment system has the following characteristics: Teaching and assessment are considered separate activities; the first is the responsibility of the teacher and the latter is the responsibility of the measurement expert. This distinction has given rise to various doubts about the validity of these tests, which are not directly related to the actual teaching in the classroom. In addition, students are often not informed about the test plan, item writing, and the development of test performance evaluation criteria and the scoring process. Moreover, the items and/or tasks are irrelevant to the student's life experience. Tests, which are usually paper and pencil type, are administered in a classroom setting, under time constraints, and by prohibiting the use of supplementary materials and tools. This type of assessment, which takes place under stressful conditions and unrealistic constraints, evaluates only the product, ignoring the process, and usually the results are in the form of a single total score. Contrary to the traditional assessment approach, the HILL building block, Assessment as Learning, underlines that assessment is not a stressful examination period; however, it is a learning process in which progress is monitored, guided through reflection and feedback, and should be carried out simultaneously with learning (Dochy & Struyven, 2002; Vermetten, Daniels, & Ruijs, 2001). The purpose of assessment is not to decide what the learners can or cannot do, not to judge their performance, but to inform them on how to progress by focusing on their own learning and developing abilities. Therefore, the learners discover to what extent they have progressed and how far they have progressed in the development process. This means that the learner is constantly seeking and receiving constructive feedback and using it as a start or follow-up to the learning path. The learners are actively involved in setting learning goals, planning their own learning roadmap, monitoring progress through reflection

and feedback, and deciding next steps in their learning process. In this way, every assessment moment is also a learning moment, and assessment is contextualised and integrated into the learning process, so the motivation can remain intrinsic. Assessment as learning therefore argues for the use of (process) data, which are collected during the learning process as a source of information to evaluate learning.

2.2. High-Impact Practices (HIPs) and Their Effects

According to Kuh (2008), HIPs are teaching and learning practices aiming to enhance student retention and student engagement rates, which can take many different forms depending on learner characteristics and institutional priorities and contexts. The effects of HIPs have been researched in many disciplines, such as economics, education, engineering, psychology, marketing, biology, physics, chemistry, mathematics, criminal justice, history, anthropology, sociology, communications, media & public relations, mostly at higher education institutions and it has been found to have various positive effects on university students from many different backgrounds. HIPs make it possible to assess student participation and the contribution of the practices to students' cumulative learning.

In order to determine the effects of single HIPs, limited combinations (LC) (<6 practices) and extended combinations (EC) (≥6 practices) of HIPs, Arikan, Dochy, & Segers (2022) conducted a review study by examining 56 systematically selected articles.

As a result of this first systematic literature review, it was determined that single HIPs have 18 different positive effects on the learning process. They enhance communication, collaboration, problem solving skills, motivation, social responsibility, personal growth and social development, sense of belonging and institutional acceptance, leadership skills, leadership positions, knowledge transfer, critical thinking, academic success, engagement, graduation rates, attendance, persistence and retention, job-readiness skills, time management skills. Among these effects, critical thinking, communication and collaboration are the most promoted ones.

Furthermore, the research showed that the fourteen LC of HIPs identified have 17 different positive effects. The enhanced effects are named as: collaboration, critical thinking, communication, retention and graduation rate, leadership of one's own learning, positive learning environment, appreciation of diverse perspectives, personal growth, transformational learning, sense of belonging, leadership skills, engagement, career related opportunities, motivation, problem solving skills, academic success, social responsibility. Most common effects of LC of HIPs are communication, collaboration and career related opportunities.

Additionally, 16 different positive effects of EC of HIPs were gathered under five main headings. Under the heading of achievement-focused effects, promoting retention and graduation rates, increasing academic achievement; under the

heading of motivation-focused effects, making students' education more meaningful, promoting student engagement and motivation; under the heading of personal development focused-effects, enhancing students' personal growth and social development, appreciation of diversity, becoming leaders of one's own learning, being aware of one's own skills, abilities, beliefs; and under the heading of learning process-focused effects, enhancing learning, empowering students, collaboration are located. The last heading, the competence/skills development-focused effects, on the other hand, has the most impact with its features of developing transformative learning, leadership skills, student and faculty/peer/society interaction, critical thinking, and job readiness skills. Moreover, the most common effects of EC of HIPs can be listed as: increased student engagement and motivation, increased critical thinking, higher academic achievements, higher graduation rates and retention.

3. Methods

This review that wants to help to develop a theoretical framework for high-impact learning is both integrative and interdisciplinary. Research is "integrative" because the purpose of the review is to summarise the knowledge gained about high-impact learning and to point out the problems that have been resolved through research (Taveggia, 1974). Moreover, the research is "interdisciplinary" as it helps to create a new model of high-impact learning by crossing the boundaries of the different scientific disciplines and sub-disciplines included in the study of high-impact learning. Basically, it has been tried to find the HILL building blocks explaining the effects of high-impact learning in the learning environment in the interdisciplinary literature. Next, we identified the high-impact practices, their general and specific effects and the HILL building blocks helping to explain these effects. Finally, we clustered and rearranged the data. Below, we describe the methodology used to identify and classify the effects and the building blocks.

3.1. Criteria for Relevance

Studies conducted in all countries and disciplines were reviewed and included or excluded based on relevance. First of all, the key words "high-impact practices", "high-impact learning", "high-impact learning practices", "high-impact teaching", "high-impact teaching practices", "high-impact teaching practices", "high-impact learning methods", "high-impact teaching methods", "high-impact learning practices" and "high-impact practice" were searched in the titles of the studies. Then, the studies published in and after the year 2000 were included in the research. Third, the studies containing qualitative, quantitative and mixed method were retrieved. Finally, only sources written in English were included for pragmatic considerations.

3.2. Search Terms and Databases

For our research, we used the electronic platform Google Scholar and University

LibSearch, where we can search several databases at once. Databases included in the search were APA, PsycINFO, Psychlit, ERIC, Web of Science, and FRANCIS. Databases of research are both interdisciplinary and important within a particular discipline dealing with high-impact learning and practices. Disciplines covered are accounting, chemistry, finance and business, engineering, public administration, geophysics, social work, public policy, social sciences, education, forestry and environmental science, architecture, mathematics, psychology, computer science, criminal justice, biomedical sciences, biology, management, physics, sociology, social justice, history, humanities, foreign language, negotiation, media and public relations, health professions, economics, anthropology and so on. Among the studies obtained, the first elimination was made by removing the same articles reached using different keywords. As a result, 227 unique resources were reached. The second screening scanned our database on references that were not peer-reviewed theses and as a result 194 articles remained. The third screening aimed to select peer-reviewed research articles and as a result 38 more publications and reports were removed from our database. Finally, 156 articles remained.

The final studies were thoroughly read and selected for use in research based on various inclusion criteria: (1) studies relevant to high-impact learning and its practices (21 articles excluded); (2) studies with a clear and strong summary (10 articles excluded); (3) studies with adequate methodology, participants, and data analysis information (69 articles excluded). As a result, it was decided to include 56 articles in the study (see Table 1).

Of the 56 studies that met our inclusion criteria and were included in the study, 31 were quantitative studies (55%), 11 were qualitative studies (20%) and 14 were studies with a mixed method design (25%).

In this study, the articles were reviewed according to the applied high-impact practices, their general and specific effects, and possible HILL blocks that may help explain these effects (see **Appendix A** for a full overview). Additionally, three independent judges randomly selected 14 studies from 56 studies and independently created a coding table to identify the HILL blocks supporting the effects of HIPs detected in the studies (see **Appendix B**). Afterwards, they came together to discuss the differences identified and the negotiations continued until full consensus was achieved.

31 of the studies were quantitative in nature, however, only some provided detailed information about the experimental and control groups. For this reason, a meta-analysis was not possible, so a narrative analysis of the selected studies was conducted.

4. Results

This part will discuss the ways in which HILL building blocks explain the effects of high-impact practices in the learning environment in depth. Table 2 shows which HILL building blocks support which effects of high-impact practices.

Table 1. Results of the literature search: number of studies provided by the database and the selected articles.

	Google Scholar + University LibSearch
Key words in the titles	285
Studies published after 2000	285
Unique Sources	227
Articles	194
Peer reviewed research articles	156
Relevant articles	135
Articles having clear and strong abstracts	125
Articles containing sufficient methodology, participants and data analysis info	56

Table 2. The effects of HIPs supported by the HILL building blocks.

HILL Building Blocks / Effects of HIPs	Collaboration & coaching	Action & knowledge sharing	Flexibility	Hybrid learning	Assessment as Learning	Urgency	Learner agency
Collaboration	X	X				X	
Personal growth and social development	X	X	X		X	X	X
Communication	X	X			X		
Enhanced learning	X		X		X		
Appreciation of diversity	X	X	X		X	X	
Student-faculty/peer/community interaction	X	X			X		
Critical thinking	X	X	X		X		X
Motivation	X		X		X	X	
Academic success	X	X				X	
Retention and/or engagement	X		X	X		X	
Job-readiness skills		X				X	
Knowledge transfer		X	X		X	X	
Positive learning environment		X	X		X		
Meaningful education opportunities		X	X			X	
Sense of belonging and institutional acceptance		X					
Problem solving		X					X
Being a leader of one's own learning	X		X	X		X	X
Social responsibility			X			X	
Career related opportunities						X	
Leadership skills							X
Being aware of one's own skills/abilities/beliefs							X

4.1. Which HILL Building Blocks Explain the Effects of High-Impact Practices in the Learning Environment?

4.1.1. Collaboration and Coaching

It was observed in 48 studies that the Collaboration and coaching was associated with the positive effects of high-impact learning practices, which are collaboration, personal growth and social development, communication, enhanced learning, appreciation of diversity, student-faculty/peer/community interaction, critical thinking, leadership of one's own learning, motivation, academic success, retention and engagement.

To illustrate, it was suggested that while HIPs allow group work, they enable students to work effectively with others (Anderson, Anson, Gonyea, & Paine, 2016; Einbinder, 2018; Wismath & Newberry, 2019). Additionally, HIPs develop interpersonal skills such as, teamwork (Bampasidou, Grogan, Clark, & Sandberg, 2016; McBroom, Bullard, Kulhavy, & Unger, 2015; Trager, 2020; Larson, Downing, Nolan, & Neikirk, 2020; Farrow & Burt, 2018). Anderson, Boyd, Marin & McNamara (2019) stated that collaboration is beneficial to brainstorm ideas, create materials or get information about each other's experiences, and that communication between participants and students leads to a higher level of learning. According to Henderson (2017), internship experiences, in particular, enable students to collaborate with professional supervisors, mentors and coaches, thus facilitating development in the field of professional expertise. Additionally, Simons, Marshall, Blank, & Weaver (2020) pointed out that Academic-based and Cultural-based service learning enhances reciprocal learning, so students and recipients learn from each other. Moreover, Priest & de Campos Paula (2016), Kilgo et al. (2015) and McKim, Latham, Treptow, & Reyfield (2013) highlighted that working in teams teaches to benefit from the diversity within the group. Some studies remarked that HIPs also support the relationship between students and their peers/faculty (Dupont & Rodenborg, 2020; Kappell, Boersma, DeVita, & Parker, 2017; Wu & Park, 2019; Miller et al., 2011; Perrotta, 2020; Wolaver & Finley, 2020; Price & Tovar, 2014; Cotten & Thompson, 2017; Morgan, Zilvinskis, & Dugan, 2021; McDaniel & Van Jura, 2020; Sweat, Jones, Han, & Wolfgram, 2013; Nelson Laird, BrckaLorenz, Zilvinskis, & Lambert, 2014; Weber & Myrick, 2018; Dinh & Zhang, 2020; Myers, Myers, & Peters, 2019; Zilvinskis & McCormick, 2019; Miller, Rocconi, & Dumford, 2018; Armstrong-Mensah, Ramsey-White, & Alema-Mensah, 2019; Murray, 2015; Alston & Ericksen, 2019; Fassett, Haeger, & BrckaLorenz, 2020; Gipson & Mitchell Jr., 2017; Rodriguez & Koubek 2019; Conefrey, 2018; Ribera, Miller, & Dumford, 2017; Lane & Miller, 2019; Ishaq & Bass, 2019; Rivera & Loebick, 2017; Shavers & Mitchell, 2019). However, it was suggested that the effect of student-faculty interaction is insignificant for transfer students (Zilvinskis & Dumford, 2018). According to Di Maggio (2019), students studying abroad (diversity learning) showed greater co-participation in more activities than their peers. Furthermore, Bonet and Walters (2016) announced that by working together, students become competent to reassess what they know about their way

of thinking and how they know this. They also learn to re-evaluate their old perspectives and gain new perspectives by creating understandings that link their different social and academic lives. Studies have shown that student-faculty interaction increases student motivation and success, allows for increased student retention, and improves student performance in the classroom. In addition to all these positive effects, student-faculty interaction is an important predictor of increasing participation in high-impact practices for students with gender variability (BrckaLorenz, Garvey, Hurtado, & Latopolski, 2017; Garvey, BrckaLorenz, Latopolski, & Hurtado, 2018; Kilgo, Linley, Renn, & Woodford, 2019). As Kilgo et al. (2015) emphasise, interactions with faculty members outside the classroom are inherent components of high-impact practices. However, Johnson & Stage (2018) pointed out that independent student research projects are more credible for students' learning outcomes than assisting faculty with research, due to the different roles the assistants take on and the limited scope a college student can be involved in.

4.1.2. Action and Knowledge Sharing

24 studies mentioned that action and knowledge sharing is one of the reasons explaining the positive effects of high-impact learning. It provides communication, student-faculty/peer/community interaction, job-readiness skills, personal growth and social development, collaboration, knowledge transfer, positive learning environment, meaningful education opportunities, appreciation of diversity, critical thinking skills, academic success, sense of belonging and institutional acceptance, problem solving skills, some of the positive effects of HIPs.

One of the examples embodying these effects belongs to Anderson et al. (2016). They remarked that thanks to writing-intensive courses or common intellectual experiences, students have the opportunity to communicate and interact orally or in writing with peers, instructors or any other individual. In addition, participation in HIPs helps students to develop communication skills important for their future careers (Bampasidou et al., 2016; Weber & Myrick, 2018; Alston & Ericksen, 2019), provides the opportunity to build a network of peer support (Bonet & Walters, 2016), exposes students to diverse learning environments (Dinh & Zhang, 2020), builds teamwork skills (Farrow & Burt, 2018), allows students to learn from each other (Ferrari & Fine, 2016), promotes not only student-faculty interaction inside and outside the classroom, but also friendships (Priest & de Campos Paula, 2016; Dupont & Rodenborg, 2020; Miller et al., 2011), fosters interaction with peers inside and outside of the classroom (Perrotta, 2020; Wismath & Newberry, 2019; Larson et al., 2020), encourages students to create new knowledge (Murphrey et al., 2016), enhances active and collaborative learning (Price & Tovar, 2014; Rodriguez & Koubek, 2019); focuses on teamwork and students' integration of knowledge gained in other courses with their teammates (Armstrong-Mensah et al., 2019). According to Murray (2015), the purpose of HIPs is to make judgments about the value of information by discussing ideas or information obtained from different perspectives and various

sources through classroom discussions with faculty members and others outside of class. Additionally, Johnson & Stage (2018) and Conefrey (2018) remarked that due to working collaboratively, students experience social, academic and psychological benefits. It was also suggested that positive interactions with faculty, peers and others from diverse backgrounds have positive effects of students' sense of belonging and cause lower levels of isolation (Ribera et al., 2017). Furthermore, Rivera & Loebick (2017) declared that students work with co-learners and faculty instructors and create ePortfolios from what they learn from each other. In this way, ePortfolios become a living, virtual tool others can follow the ongoing reflective thinking and give feedback. Learning from each other also improves students' ability to build and communicate understanding for an authentic audience. In Simons et al.'s (2020) study, it was mentioned that students participating in academic and cultural-based service-learning practices perceive the classroom environment as a place where their views are shared, valued and interpersonal problem-solving skills are gained.

4.1.3. Flexibility

21 studies demonstrated how flexibility plays an important role in supporting the effects of HIPs listed as: personal growth and social development, knowledge transfer, enhanced learning, critical thinking, engagement, being a leader of one's own learning, making education more meaningful, appreciation of diversity, positive learning environment, engagement, motivation, social responsibility.

High-impact learning activities guide students on how to adapt to the reality where they live as a global citizen and also give them the ability to adapt quickly to a changing environment (Bampasidou et al., 2016), encourage students to connect in-class-materials with informal experiences (Murphrey et al., 2016; Armstrong-Mensah et al., 2019), bring what is planned in theory into practice (Priest & de Campos Paula, 2016; Zilvinskis & Dumford, 2018), expose students to diverse learning environments (Dinh & Zhang, 2020), provide transformational learning opportunities inside and outside of the classroom (Wu & Park, 2019; Henderson, 2017; Miller et al., 2018; Larson et al., 2020; Zilvinskis & McCormick, 2019), help students to integrate and synthesise what they have learned and apply it in various environments and allow them to apply their acquired knowledge and skills to the real world settings (Cotten & Thompson, 2017; Alston & Ericksen, 2019), provide informal academic environment which can foster student engagement in HIPs (Murray, 2015), allow students to connect learning experiences with specific experiences by applying them to different contexts (Farrow & Burt, 2018; Fassett et al., 2020). Also, while study abroad provides an effective experience for students to gain the necessary skills to be agents of social change (Ferrari & Fine, 2016), service-learning provides students an ideal real-world setting not only to put the lessons into practice but also to reevaluate their previous attitudes and overcome their fears (Knouse, 2018). Additionally, collaborative outdoor learning can help students to develop a sense of

place in specific areas while enabling them to make meaningful emotional and intellectual connections (McBroom et al., 2015). Furthermore, Kilgo et al. (2015) emphasised that students participating in service learning and community-based learning showed improvement in the areas of openness to diversity, multicultural competence, taking a global perspective and intercultural effectiveness. In addition, these students' commitment to political awareness, socially responsible work, the feeling of civic and social responsibility increased. McKim et al. (2013) pointed out that service learning and community-based learning provide students field-based experiences students learn how to apply knowledge learned in a classroom setting to a real-world setting.

4.1.4. Hybrid Learning

According to Shavers & Mitchell (2019), hybrid learning fosters the effect of being a leader of one's own learning and engagement. They emphasised that among the well-developed high-impact activities complementing the traditional curriculum, internship experiences should be developed as blended courses where students can identify specific outcomes that can be directly assessed.

4.1.5. Assessment as Learning

This block reinforces student-faculty/peer/community interaction, positive learning atmosphere, personal growth and social development, critical thinking, transformative learning, appreciation of diversity, communication, motivation, enhanced learning among the effects of HIPs. Moreover, since Assessment as Learning is a learning process in which progress is monitored and guided through reflection and feedback provided to the learner on a timely and regular basis, the importance of feedback is evident in many studies examined.

For instance, 12 articles showed that one of the key elements defining high-impact practices is constructive, timely and frequent feedback (Bampasidou et al., 2016; Murphrey et al., 2016; Nelson Laird et al., 2014; Kilgo et al., 2015; Dinh & Zhang, 2020; Myers et al., 2019; Zilvinskis & McCormick, 2019; Miller et al., 2018; Armstrong-Mensah et al., 2019; Farrow & Burt, 2018; Garvey et al., 2018; Rodriguez & Koubek, 2019). Also, 7 studies addressed the importance of feedback in learning. Anderson et al. (2016) mentioned that to engage students in interactive writing processes, feedback from classmates/friends/family members, feedback from community volunteers (alumni, campus employees or an expert in the related field) or feedback from the instructor is used, so the relationship with student learning and writing is established. Weber and Myrick (2018) stated that not only the feedback given by the weekly mentor is very important for students' learning, but also the peer-to-peer feedback in forums allows students to form communities and gain useful information and new perspectives. Timely feedback helps students develop self-regulation habits. In this way, students do richer and more accurate work over time as they can make necessary adjustments thanks to the consistent feedback they receive from someone else throughout the learning activity, rather than waiting for a final assess-

ment. According to Goulette & Denney (2018), students often receive frequent and timely feedback from their instructors which can help students consolidate their connection with the course material. Furthermore, Perrotta (2020) suggested that students' participation in HIPs could be supported by detailed feedback on discussion posts in online faculties. Also, in their short-term study abroad/service learning course in Guatemala, Cotten & Thompson (2017) stated that thanks to instructor feedback and the feedback from each other, students combine, synthesise and apply what they have learned in Guatemala. Additionally, Conefrey (2018) and Rivera & Leobick (2017) emphasised the importance of feedback in ePortfolios. While Conefrey (2018) remarked that since the ePortfolio has a digital format, students' progress can be seen by others and their progress becomes more visible thanks to the readers' feedback, Rivera & Leobick (2017) pointed out that ePortfolios are commonly used tools for providing evidence of learning. Moreover, Ishaq & Bass (2019) suggested that feedback is one of the main features defining high-impact practices and necessary for students. As students try to adapt to their new environment, they go through psychological processes result in developing positive self-efficacy, reducing stress, increasing efficacy, and an internal locus of control helping increase their own motivation. These processes are interactive with constant feedback and adjustment. In addition, Bonet & Walters (2016) emphasised the importance of reflection. They stated that the most effective meaningful reflections occur during the learning process from and among teachers and peers as this give all learners the opportunity to critically evaluate their prior understanding of social, scientific and academic realities to reach higher levels of "mind, self, and society" awareness (p. 227).

4.1.6. Urgency

It was determined that urgency supports job-readiness skills, collaboration, meaningful education atmosphere, transformative learning, personal growth and social development, social responsibility, being a leader of one's own learning, motivation, retention, academic success, appreciation of diversity, career relevant opportunities.

In 23 studies, it was emphasised that high-impact practices make student learning more meaningful and interesting. One of the reasons of that was stated in 11 studies as preparing students for their future careers with job-related knowledge and skills (Anderson et al., 2016; Bampasidou et al., 2016; Zilvinskis & McCormick, 2019; Rodriguez & Koubek, 2019; Armstrong-Mensah et al., 2019; Dinh & Zhang, 2020; Simons et al., 2020; Alston & Ericksen, 2019; Farrow & Burt, 2018; Fassett et al., 2020; Goulette & Denney, 2018). Also, the practices enhance the ability to work effectively with others (Anderson et al., 2016), prepare graduates for employment after graduation with real world experiences (Murphrey et al., 2016), enable students to experience the needs and realities of a global society (Ferrari & Fine, 2016; Larson et al., 2020), allow students to engage in meaningful interactions (Ribera et al., 2017), help to achieve student-set goals

such as gaining insight into possible career choices and increasing marketability for future competitive opportunities (Dupont & Rodenborg, 2020). Trager (2020) announced that internships facilitate the transition from university to work life as they offer students the opportunity to gain experience in their work environment before completing their education. In addition, while students have the opportunity to develop the skills necessary for their careers, they may also have the opportunity to find a job with better conditions (Trager, 2020). Also, according to Henderson (2017), through the internship experience, students have the opportunity to practice directly in a professional workplace setting and gain insight into when and how to apply the skills necessary to developing expertise. Weber & Myrick (2018) declared that ePortfolios make learning more visible and the feedback the students get from others increase their motivation. Also, students are more intrinsically motivated in the internships and undergraduate research activities (Miller et al., 2011). Myers et al. (2019) declared that in addition to retention and academic success, the deeper goal of HIPs is to build a sense of personal and social responsibility based on a broad cultural knowledge, strong intellectual and practical skills, civic responsibility and participation. These targets enable students to contribute to society and improve themselves after leaving university. As Knouse (2018) pointed out, HIPs in language courses give students the opportunity to experience communities linguistically, racially, religiously and socioeconomically diverse. In this way, students have the chance to reassess their previous attitudes about language learning and the importance of diversity. Emphasising that there is an important link between social media and ePortfolio use, Rivera and Loebick (2017) stated that young people's use of many social media platforms and the large amount of time spent on these platforms also strengthen students' ability to transfer their skills to ePortfolio and motivate them in this regard.

4.1.7. Learner Agency

The effects of HIPs listed as being a leader of one's own learning, problem solving, critical thinking, leadership skills, personal growth and being aware of one's own skills/abilities/beliefs are enhanced by Learner Agency.

One reason why HIPs have a positive impact on students is that they allow students the freedom to make their own decisions and manage their own learning. In 31 of the examined studies, the positive effects of learner agency on students were mentioned. As Anderson et al. (2016) stated that students gain practical competence thanks to HIPs and HIPs enable students to analyse complex problems and find solutions to them. In addition, HIPs improve students' analytical and critical thinking skills (Shavers & Mitchell, 2019; Rodriguez & Koubek, 2019; Conefrey, 2018; Bampasidou et al., 2016; Zilvinskis & McCormick, 2019; Anderson et al., 2016; Einbinder, 2018; Myers et al., 2019; Miller et al., 2011; Perrotta, 2020; Smith, Lundy, & Dahlmann, 2017; Wismath & Newberry, 2019; Nelson Laird et al., 2014; Kilgo et al., 2015; Lane & Miller, 2019), leadership skills (Cotten & Thompson, 2017; Wolaver & Finley, 2020; McBroom et al.,

2015; Bampasidou et al., 2016; Trager, 2020; Miller et al., 2011; Nelson Laird et al., 2014), personal growth (Shavers & Mitchell, 2019; Knouse, 2018; Perrotta, 2020; Goulette & Denney, 2018; Trager, 2020; Wismath & Newberry, 2019; Garvey et al., 2018; Nelson Laird et al., 2014; Kilgo et al., 2015), awareness of personal values and beliefs (Goulette & Denney, 2018; Cotten & Thompson, 2017; Alston & Ericksen, 2019), problem solving skills (Shavers & Mitchell, 2019; Perrotta, 2020; Alston & Ericksen, 2019), taking the responsibility for their own learning and development (Di Maggio, 2019; Henderson, 2017; Rivera & Leobick, 2017; Goulette & Denney, 2018; Bonet & Walters, 2016) and self-efficacy (Shavers & Mitchell, 2019; Conefrey, 2018; Cotten & Thompson, 2017; Alston & Ericksen, 2019). Bampasidou et al. (2016) highlighted that thanks to the programs in which HIPs are applied, students learn to make strategic decisions, produce solutions to problems and perform under pressure in a competitive environment. It has been stated by Ferrari & Fine (2016) that especially study abroad practice has positive contributions to students' decision-making processes, especially thanks to its positive effects such as social awareness, multiple perspectives, analysing risk factors, and "a self-authored life" (p. 121). Moreover, in the Priest & de Campos Paula's (2016) study, students participating in the HIPs stated that they gained self-awareness not only about leadership, but also about their own leadership identities and capacities. Additionally, Weber & Myrick (2018) declared that ePortfolios allow students to realise their own talents and skills. Also, while Nelson Laird et al. (2014) remarked that internships increase the sense of independence and socially responsible leadership skills of students, Simons et al. (2020) added that participation in an internship enhances students' sense of responsibility.

5. Discussion and Conclusions

Developments in information and communication technology, increased production of information in the economy and globalisation have caused a great change in professional structure and expectations. Recent research on general university qualifications clarifies that the skills needed in the field of business are not acquired during university life, but during working life, and students do not have the opportunity to acquire sufficient social skills and experiences such as interaction with customers throughout their university life. It has become a necessity to reshape education urgently in a qualified and sufficient way. It is of great importance to make changes in the field of education to prevent the gap between education life and work and social life from getting bigger and to ensure effective learning of students to meet the new expectations (Dochy, Segers, & Arikan, 2022).

In 2008, Kuh presented eleven high-impact learning practices addressing high-impact learning techniques and designs and combining views on how to support effective learning. The purpose of these educational practices is to increase student retention and improve student engagement. They are: first-year

seminars and experiences, common intellectual experiences, learning communities, writing-intensive courses, collaborative assignments and projects, undergraduate research, diversity and global learning, service learning (community-based learning), internships, capstone courses and projects, and e-Portfolios.

Many studies conducted especially in the USA and in higher education show that HIPs—whether they are applied separately or in various combinations—have positive effects on a learning process. Some of these positive effects can be listed as making student learning more recognisable and unified, significant increases in the critical thinking skills of students, developing a global perspective and promoting self-authorship, participation in deep learning activities and their personal and social development, having better attitudes towards interacting with staff and fellow classmates.

According to the review study of Arikan et al. (2022), it was detected that single HIPs have 18 different positive effects on the learning process. They foster communication, collaboration, problem solving skills, motivation, social responsibility, personal growth and social development, sense of belonging and institutional acceptance, leadership skills, leadership positions, knowledge transfer, critical thinking, academic success, engagement, graduation rates, attendance, persistence and retention, job-readiness skills, and time management skills. Moreover, the fourteen LC of HIPs (<6 practices) identified have 17 different positive effects. These effects can be listed as collaboration, critical thinking, communication, retention and graduation rate, leadership of one's own learning, positive learning environment, appreciation of diverse perspectives, personal growth, transformational learning, sense of belonging, leadership skills, engagement, career related opportunities, motivation, problem solving skills, academic success, and social responsibility. Finally, 16 different positive effects of EC of HIPs (≥6 practices) were listed under five main headings. Under the heading of achievement-focused effects, promoting retention and graduation rates, increasing academic achievement; under the heading of motivation-focused effects, making students' education more meaningful, promoting student engagement and motivation; under the heading of personal development focused-effects, enhancing students' personal growth and social development, appreciation of diversity, becoming leaders of one's own learning, being aware of one's own skills, abilities, beliefs; and under the heading of learning process-focused effects, enhancing learning, empowering students, and collaboration are located. The last heading, the competence/skills development-focused effects, on the other hand, has the most impact with its features of developing transformative learning, leadership skills, student and faculty member/peer/society interaction, critical thinking, and job readiness skills.

In addition to the mentioned contributions of HIPs to the learning process, specific features of the learning environment enhance learning. For example, shared lessons or shared experiences, collaboration and active learning among students application of hybrid learning, combining formal and informal learning

support learners and can increase their success. Also, in recent years, new perspectives on learning such as Engeström's expansive learning theory, Siemen's connectivism theory, Semler's philosophy and Lumiar approach have led to the emergence of "hybrid expansivism".

By taking recent approaches to learning and analysis of review studies into account, Dochy and Segers developed the High-Impact Learning that Lasts (HILL) model (2018). They gathered the results of their analysis into seven building blocks: urgency, learner agency, action and knowledge sharing, collaboration and coaching, hybrid learning, flexibility, and assessment as learning to encourage and facilitate effective learning.

The aim and intend of this study is to examine the studies on HIPs to determine the effects of HILL building blocks on the effects of HIPs on the learning environment. In this way, it will shed light on the search for making learning more permanent and effective by contributing to the findings of the studies conducted in this field. Based on the findings of our literature review, we can make the following inferences.

The effects of HIPs in the learning environment are supported and strengthened by seven building blocks of the HILL model. Collaboration and coaching enables students to work effectively with others, develop interpersonal skills, such as teamwork teaching to benefit from the diversity within the group. It is also beneficial to brainstorm ideas, create materials or get information about each other's experiences, and that communication between participants and students leads to a higher level of learning. Moreover, student-faculty interaction increases student motivation and success, allows for increased student retention, and improves student performance in the classroom. To conclude, Collaboration and coaching strengthens collaboration, personal growth and social development, communication, enhanced learning, appreciation of diversity, student-faculty/peer/community interaction, critical thinking, leadership of one's own learning, motivation, academic success, retention and engagement, which are the effects of HIPs. Action and knowledge sharing helps students to develop communication skills, provides the opportunity to build a network of peer support, builds teamwork skills, allows students to learn from each other, promotes not only student-faculty interaction inside and outside the classroom, but also friendships, fosters interaction with peers inside and outside of the classroom, encourages students to create new knowledge, enhances active and collaborative learning, focuses on teamwork and students' integration of knowledge gained in other courses with their teammates. While working collaboratively, students experience social, academic and psychological benefits. Moreover, positive interactions with faculty, peers, and others from diverse backgrounds enhance students' sense of belonging and lead to a lower level of isolation. Considering the mentioned features, it can be concluded that action and knowledge sharing is associated with the effects of HIPs which are communication, student-faculty/peer/community interaction, job-readiness skills, personal growth and social devel-

opment, collaboration, knowledge transfer, positive learning environment, meaningful education opportunities, appreciation of diversity, critical thinking skills, academic success, sense of belonging and institutional acceptance, problem solving skills. Through flexibility, HIPs guide students on how to adapt to the reality they live in as global citizens, give them the ability to adapt quickly to a changing environment, encourage students to connect with classroom materials through informal experiences, turn what is planned in theory into practice, provide students with transformative learning opportunities in and outside the classroom, help students integrate and synthesise what they have learned and apply it in a variety of settings. Also, flexibility allows students to adapt their acquired knowledge and skills to real-world settings, to provide informal academic environments encouraging students' participation in HIPs, to combine students' learning experiences with specific experiences by applying them to different contexts. Additionally, openness to diversity, multicultural competence, taking a global perspective, intercultural effectiveness, political awareness, socially responsible work, the feeling of civic and social responsibility are among the benefits of flexibility. Hence, flexibility fosters personal growth and social development, knowledge transfer, enhanced learning, critical thinking, engagement, being a leader of one's own learning, making education more meaningful, appreciation of diversity, positive learning environment, engagement and motivation, social responsibility that are the effects of HIPs. In addition, hybrid learning supports the effects of being a leader of one's own learning and engagement. Assessment as learning is often associated with constructive, timely and often given feedback. In addition, feedback is accepted as an assessment and a learning tool. Not only weekly mentor feedback for students' learning, but also peer-to-peer feedback in forums allows students to build communities, gain useful knowledge and new perspectives. Also, it helps students develop self-regulation habits, consolidate their connection with the course material, combine, synthesise and apply what they have learned. Moreover, thanks to continuous feedback, students adapt to their new environment more easily, while at the same time they experience the processes of developing positive self-efficacy, reducing stress and increasing their own motivation more efficiently. All in all, the effects of student-faculty/peer/community interaction, positive learning atmosphere, personal growth and social development, critical thinking, transformative learning, appreciation of diversity, communication, motivation, enhanced learning are reinforced by Assessment as learning. Urgency prepares students for their future careers with job-related knowledge, skills and real-world experiences, enhances the ability to work effectively with others, gives students a career-related advantage through involvement in transferable skills development, such as cultural awareness, interpersonal skills and learning opportunities, helps to achieve student-set goals such as gaining insight into possible career choices and increasing marketability for future competitive opportunities. Moreover, the deeper goal of HIPs is to build a sense of personal and social responsibility based on a broad cultural

knowledge, strong intellectual and practical skills, civic responsibility and participation. These targets enable students to contribute to society and improve themselves after leaving university. As it is observed, urgency triggers the effects of job-readiness skills, collaboration, meaningful education atmosphere, transformative learning, personal growth and social development, social responsibility, being a leader of one's own learning, motivation, retention, academic success, appreciation of diversity, career relevant opportunities. By allowing students the freedom to make their own decisions and manage their own learning, the last building block, learner agency supports some of the effects of HIPs which are being a leader of one's own learning, problem solving, critical thinking, leadership skills, personal growth and being aware of one's own skills/abilities/beliefs. To illustrate, HIPs enable students to analyse complex problems, to find solutions to these problems, to think analytically and critically. In addition, HIPs encourage students' leadership skills, personal growth, awareness of personal values and beliefs, taking responsibility for their own learning and development, and self-efficacy. Through programs in which HIPs are implemented, students learn to make strategic decisions and perform under pressure in a competitive environment. Students participating in HIPs gain self-awareness not only of leadership, but also of their own leadership identities and capacities.

To sum up, it was concluded that almost all of the effects of HIPs in the learning environment were supported and strengthened by the implementation of the seven building blocks of the HILL model. Moreover, HILL building blocks make HIPs more applicable while also making their effects more permanent.

Limitations of the Study and Suggestions for Future Research

One of the inclusion criteria of the study was the examination of articles written on HIPs. This criterion also constitutes one of the limitations of the study. Master's and doctoral studies in this field were not included in this study. However, these studies will be complementary to the findings of this study.

Including only English sources in the research is a second limitation. Examining studies on HILL building blocks and HIPs in other languages will both add diversity to the results of this study and provide an opportunity to compare the results obtained from English sources with research results in other cultures.

Finally, this review only explored the roles of HILL building blocks in the effects of HIPs on a learning environment. However, while examining these roles, the effects of different factors, such as demographic background and/or high school GPA of students, which may play an active part in these roles, were not examined. This limitation can be a starting point for different studies examining how the effects of HILL building blocks in the learning environment can change with which factors.

Despite the limitations noted above, the current review provides a clear overview of the role of HILL building blocks in the effects of HIPs in learning envi-

ronments. Thus, it sheds light on the application methods of HILL building blocks to make the learning process more permanent, effective and high quality. The results of this review can form the basis for researchers and educators wanting to turn the learning process into a more diverse and effective journey with new approaches.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix A. Results of the Literature Search

https://docs.google.com/spreadsheets/d/19BJ59_bYyP0s7cQwyRA6klPsbhndgVqj/edit?usp=sharing&ouid=104645914838019950207&rtpof=true&sd=true

Appendix B. HILL Blocks Supporting the Effects of HIPs

https://docs.google.com/document/d/1-XdMvObGiTPZ4YKuWNPq3J1EKlGiQee5/edit?usp=sharing&ouid=104645914838019950207&rtpof=true&sd=true