



Effects of High-Impact Learning Practices: A Review

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ABSTRACT

One of the biggest concerns that has come to the fore in the field of education recently is whether colleges and higher education institutions offer educational programs providing their students with the basic skills and competences necessary to meet the requirements of the globalising and rapidly changing world and the accordingly changing labour market. To answer this question, this review investigated the effects of 11 high impact practices (HIPs) based on single HIPs (RQ1), limited combinations (LC) of HIPs (RQ2), and extended combinations (EC) of HIPs (RQ3). For this study, selected 56 studies were analysed by narrative analysis. As a result, 18 different positive effects were determined on which single HIPs enhanced. Among these effects critical thinking, communication and collaboration were the most promoted ones. In addition, fourteen LC of HIPs with 17 different positive effects were detected. Communication, collaboration and career related opportunities were the most common effects of LC of HIPs. Furthermore, 16 different positive effects of EC of HIPs can be grouped under five main headings as achievement-focused effects, motivation-focused effects, competence development-focused effects, personal development-focused effects and learning process-focused effects. EC of HIPs have the most competence/skills development-focused effects with their features of developing transformative learning, leadership skills, student and faculty/peer/community interaction, critical thinking, time management and job-readiness skills. Also, the most common effects of EC of HIPs were increased student engagement and motivation, increased critical thinking, higher academic achievements, higher graduation rates and retention.

Keywords: High impact learning, High impact learning practices, HIPs, High impact practices, Higher education.

INTRODUCTION

Colleges and higher education institutions have double mission. One is to help students take an active role in the key positions of the society and the other one is to equip them with domain specific competences that enable them to solve complex problems. However, one of the biggest concerns in the field of education that has been on the agenda lately is whether colleges and

higher education institutions offer training programmes providing their students the foundational skills and competences which are essential in a globalised world for supporting a life full of challenges and that meet the requirements of the labour market.

According to Tynjälä, Slotte, Nieminen, Lonka, & Olkinuora [2006], although professionals seemed very satisfied with the general mastery of knowledge the university equipped them with, they report that they only learned the most important skills they need on the job. Also, most of the graduates think that they haven't got enough practice in social skills and in interaction with clients in their university life. In addition, after the analysis of more than 2,300 undergraduate students, Arum & Roksa [2011] remarked that more than a third of the students did not show a significant improvement in a variety of skills, including critical thinking, complex reasoning, and writing, after four years at university. They also included the words of Derek Bok, the former president of Harvard University, in their study as follows:

Colleges and universities, for all the benefits they bring, accomplish far less for their students than they should. Many students graduate college today without being able to write well enough to satisfy their employers...reason clearly or perform competently in analysing complex, non-technical problems. [p. 1]

It can be indicated that many universities, colleges, and training centers teach their students certain knowledge and test their mastery of this knowledge without ensuring that they can apply it in the real world. However, graduates should not only be tested based on their knowledge, but also be able to perform according to both the expectations of the society and the labour market. Otherwise, as Mulder [2012] stated, the structural disconnection between the world of education and training and the world of business and society will increase. In order to promote and prepare students for global competitiveness, more emphasis should be placed in educational programs on the ability to develop competences that are necessary in the future dynamic society. The need for this change and renewal in the education system has brought up a vital question: "What can colleges and universities do to promote high-impact learning?"

In the constantly changing world, while the needs of the labour market, the expectations of the society, and the goals of people are changing rapidly, teaching processes cannot be stuck in traditional methods that can only be carried out within class time and classroom walls where a teacher transfers knowledge to the passive learners. By expressing their knowledge and opinions, many experts have recently tried to shape the educational world to ensure high-impact learning. To illustrate, Dochy & Segers [2018] opined that the essence of training programs that create impact on learners and their learning should include working and learning in teams, trust in partners, workplace learning, problem-solving, flexibility, openness, searching for information, selecting accurate and reliable information, being critical, creating engagement, entrepreneurship, and so on. Recently, Dochy & Segers developed this into a High Impact Learning that Lasts model combining this knowhow with the research results of the last 25 years. Miller, Rycek & Fritson [2011] observed that academic effort, active participation, collaborative learning, relevance, student-faculty interactions and intrinsic interest are engaging factors for students.

Moreover, various studies have been conducted to determine the validity of good practices in undergraduate education and their positive outcomes for students. For instance, Pascarella,

Palmer, Moye & Pierson's [2001] study showed that involvement in diversity experiences during college years has statistically significant positive effects on students' critical thinking skills. Also, according to Astin [1999], the greater the student's participation in the university, the greater the student's learning and personal growth will be.

In recent years, a perspective called "hybrid expansivism" has emerged, with the influences of new perspectives and several innovations in practice such as, Engeström's theory of expansive learning [Engeström & Sannino, 2010; Dochy, Engeström, Sannino, & Meeuwen, 2021], Siemen's theory of connectivism [Siemens, 2005], Semler's philosophy [Semler, 1993], and the Lumiar approach [Groff, 2013]. This new perspective argues that learning for the future should have the following essential features:

- 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., 2021, p. 10]

In the light of these findings, as an answer for the aforementioned question, high-impact learning can be achieved by engaging students in good quality and high-impact educational practices preparing students to participate in a dynamic workplace and an increasingly diverse world.

HIPs are known as practices increasing student retention and improving student engagement, which can be introduced in programmes, even if they are traditionally structured curricula that do not fully aim all principles of High Impact Learning [Dochy & Segers, 2018]. They are identified as: (1) first-year seminars and experiences, (2) common intellectual experiences, (3) learning communities, (4) writing-intensive courses, (5) collaborative assignments and projects, (6) undergraduate research, (7) diversity and global learning, (8) service learning, (9) internships, (10) capstones and projects and (11) e-Portfolios.

To briefly explain these practices: The first HIP, first-year seminars and experiences, refers to regular meetings of small groups of students with faculty or staff. To develop students' intellectual and practical capabilities, they emphasise critical inquiry, frequent writing, information literacy, collaborative learning, and other skills [Kuh, 2008]. As a second practice, common intellectual experiences are concerned with the use and incorporation of knowledge gained from various previously studied core courses. These programs often unite broad themes, such as technology and society, or unemployment [Alias & Aris, 2016; Kuh, 2008]. The third practice, learning communities, relates to encouraging the integration of learning across courses and encouraging students to think beyond the classroom walls. According to Kuh [2008], students are expected to take two or more linked courses and work as a group with their professors while exploring a common topic. Next practice, writing-intensive courses, refers to emphasising writing at all teaching levels and across the curriculum, including senior

year projects. Students are supported to produce and review a variety of writing styles for different audiences in different disciplines [Kuh, 2008]. The fifth practice, collaborative assignments and projects, has two primary goals; while learning to work with people in other companies, learning to solve the problems and sharpening one's own understanding by taking others' insights seriously. Study groups within a course, team-based assignments and writing, collaborative projects and research are some of the approaches used in this practice [Kuh, 2008]. The aim of the sixth practice, undergraduate research, was explained by Kuh [2008] as "to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions" [p. 10]. This practice sometimes asks students to communicate with community members to collect data or to document observations [Knouse, 2017]. The other practice, diversity experiences, highlights studies which help students observe different cultures, life experiences, and worldviews. These studies often search socio-cultural diversity, religious, ethnic and gender inequality or the global issues like environment, security, freedom and global peace. Intercultural studies are enhanced through experiential learning in the community and/or study abroad [Alias & Aris, 2016; Kuh, 2008]. According to Bringle & Hatcher [1995], the aim of the eighth practice, the service learning, is for students to gain a better understanding of course content and an enhanced sense of civic responsibility while participating in an organized service activity that meets identified community needs. According to Sgroi and Ryniker [2002], the ninth practice, internships, not only provides students enough time to adequately prepare for their professional future, but also helps students gain understanding of the demands of the profession while discovering their own "work-readiness skills" [p. 194]. In other words, the internships are aimed at providing students with direct experience in their career-related fields with the supervision and the coaching from professionals in the field [Kuh, 2008]. The tenth practice, capstone courses and projects, is also called "senior capstones" since they are the last projects which should be completed in the final year of undergraduate experience. They require students to integrate knowledge and skills acquired during college years and create a project. The project might include a research paper, a performance, a portfolio of best work, an exhibit of artwork, a creative project, a presentation, reflections, or creation of an innovative product or service [Kuh, 2008; Pierce et al., 2019]. The last practice, ePortfolios, allows students to collect their work electronically over time, reflect on their personal and academic progress, and then share selected items with their professors, advisors, and potential employers. Since aggregation over time is a key element of the ePortfolio process, using ePortfolios in collaboration with other high-impact applications provides students with opportunities to connect a variety of educational experiences [Kuh, 2008].

While research on high-impact learning continues to expand across various disciplines, it becomes increasingly important to integrate what is already known and achieved. The purpose of this review is to determine the effects of single, limited combinations (LC) and extended combinations (EC) of HIPs. As a consequence, the research questions addressed in this review study are:

1. Which effects do single HIPs have?
2. Which effects do LC of HIPs (<6) have?
3. Which effects do EC of HIPs (≥6) have?

METHODOLOGY

The review we used to contribute to the effects of developing a theoretical framework for high-impact learning is both integrative and interdisciplinary. It is “integrative” since as Taveggia [1974] mentioned the aim of the review is to summarise the accumulated knowledge about high-impact learning and to highlight the important issues left unresolved by the research. It is also “interdisciplinary” because it helps to create a new high-impact learning model by thinking across boundaries of the different scientific disciplines and sub-disciplines involved in the study of high-impact learning. Basically, it has been tried to find the effects of high-impact learning in the interdisciplinary literature, the differences in the effects of different practices used and the factors in the learning environment that explain these effects. Then, we ripped the HIPs, their effects and the factors helping to explain the effects apart. Finally, we clustered the data and reorganised them. Below, we describe the methodology used to identify and classify the effects and factors.

Criteria for Relevance

Studies from all countries and kinds of disciplines were reviewed and included or rejected based on their relevance. First, 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. Second, the studies published in and after the year 2000 were retrieved. Third, studies containing qualitative, quantitative and mixed methods were considered relevant. Finally, for pragmatic considerations sources written in English were included.

Search Terms and Databases

For our search we made use of the electronic platform Google Scholar and the University LibSearch, which made it possible to search several databases simultaneously. Five databases were included in the search: APA, PsycINFO, Psychlit, ERIC, Web of Science and FRANCIS. These databases are either interdisciplinary or highly important within a specific discipline that addresses the topic of high-impact learning and practices. Disciplines covered are economics, accounting, finance and business, public administration, negotiation, social work, public policy, education, forestry and environmental science, engineering, architecture, psychology, computer science, biomedical sciences, geophysics, mathematics, biology, chemistry, physics, sociology, social sciences, history, humanities, foreign language, criminal justice, social justice, media and public relations, management, health professions, anthropology etc. A first selection of studies was based on the exclusion of the same articles reached by searching different keywords. This screening resulted in 227 unique sources. A second selection screened our database on references that were not dissertations which are not peer reviewed and 194 articles remained. A third selection of studies was aiming at selecting peer reviewed research articles and another 38 publications and reports were excluded from our database. As a result, 156 articles were remained.

The final studies were fully read and selected for inclusion based on various inclusion criteria: (1) the studies had to be relevant to high-impact learning and its practices (21 articles were excluded); (2) the studies had to have a clear and strong abstract (10 articles were excluded); (3) the studies had to contain sufficient methodology, participants and data analysis info (69 articles were excluded). As a result, 56 articles were retrieved (see Table 1).

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

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, a detailed synthesis table was developed after carefully reading the articles, in which the content of all the studies were discussed in different dimensions (see Appendix A for a full overview). Following this step, the articles were re-examined according to the effects of single, LC and EC of HIPs.

Although 31 of the included studies were quantitative in nature, only some did give detailed information on experimental and control groups. As a consequence, a meta-analysis was not possible and thus we performed a narrative analysis of the selected studies.

RESULTS

In this section, the results of the study will be explained in detail. The first part will focus on the single effects of HIPs. In section 3.2 and 3.3, the effects of LC and EC of HIPs will be explained.

Which Effects Do Single HIPs Have?

The results of studies addressing 18 effects of single HIPs were shown in Table 2 and explained in detail below.

Table 2. The effects of single HIPs

Collaboration	Communication	
	written & oral com. (Anderson et al., 2016); student-faculty interaction (Perrotta, 2020)	HIP 1 Writing-intensive courses
collaborative working, teamwork (Anderson et al., 2019)	contact with others, written & oral com. (Anderson et al., 2019); communicative abilities (Knouse, 2018); interpersonal, multicultural com. skills (Nelson Laird et al., 2014)	HIP 2 Service learning
collaboration abilities, trusting relationships (Einbinder, 2018); peers, faculty collaboration (Wolaver& Finley, 2020); student collaboration (Price & Tovar, 2014); peer, faculty support (Ribera, et al., 2017)	student, faculty interaction (Priest & de Campos Paula, 2016); interacting with different students (Wolaver& Finley, 2020)	HIP 3 Learning communities
	sharing achievements with others (Weber & Myrick, 2018)	HIP 4 e-Portfolio
collaborative working (Knouse, 2018; Armstrong-Mensah et al., 2019), combining faculty mentoring, peer collaboration and physical space into a single project (Nelson Laird et al., 2014)	meaningful conversations with faculty, peers (Ribera et al., 2017)	HIP5 Undergraduate research
learning from each other, (Ferrari & Fine, 2016)		HIP 6 Diversity experiences
peers & community engagement (Wismath & Newberry, 2019); working with faculty, staff and working with mentors, supervisors & coaches (Henderson, 2017); student-faculty interaction, collaborative learning (Miller, et al., 2011)	communication skills (Simons et al., 2020)	HIP 7 First year seminars & e. HIP 8 Internships
learning about and from the collaborators (Kapell et al., 2017)		HIP9 Collaborative assignments & p.
	high-level skills in knowledge, writing & speaking practices (Fassett et al., 2020)	HIP10 Capstones courses & p.

Social responsibility	Motivation	Problem-solving
professional responsibility (Henderson, 2017); increasing civic-awareness (Alston & Ericksen, 2019); civic responsibility, racial awareness (Simons et al., 2020), civic and social identity (Priest & de Campos Paula, 2016)	motivation (Henderson, 2017); thinking positively about learning, self-efficacy (Alston & Ericksen, 2019); academic motivation (Henderson, 2017)	solving problems (Anderson et al., 2019); solving real-world problems (Henderson, 2017); development of problem-solving skills (Simons et al., 2020)
	positive learning environment (Priest & de Campos Paula, 2016); motivation (Miller et al., 2011)	
	realising the activities in e-portfolios (Weber & Myrick, 2018)	
	higher intrinsic motivation (Miller et al., 2011)	
	self-efficacy (Cotten & Thompson, 2016)	

Leadership positions	Leadership skills	Sense of belonging & institutional acceptance	Personal growth & social development
			independent learning, understanding others (Anderson et al., 2016)
leadership skills (Trager, 2020)		sense of peer belonging and institutional acceptance (Ribera et al., 2017)	self-awareness (Alston & Ericksen, 2019); diversity (Knouse, 2018)
	holding leadership positions (Wolaver & Finley, 2020)	peer belonging and institutional acceptance (Ribera et al., 2017)	pedagogical and interdisciplinary knowledge (Einbinder, 2018); diverse perspectives, self-awareness of one's own learning (Priest & de
leadership of students' own experience and learning (Rivera & Leobick, 2017)			personal & intellectual growth (Weber & Myrick, 2018)
			necessary skills to be agents of social change (Ferrari & Fine, 2016);
	socially responsible leadership skills (Nelson Laird et al., 2014)		openness to diversity, sense of independence and professional development (Nelson Laird et al.,

Engagement	Academic success	Critical thinking	Knowledge transfer
simplified assignment design (Leon, 2020); asynchronous engagement (Henderson, 2017)		critical thinking (Anderson et al., 2016)	knowledge transfer (Leon, 2020)
engagement (Miller et al., 2011); higher engagement (Bonet & Walter, 2016); (Wolaver& Finley, 2020)		critical thinking (Anderson et al., 2019)	connections between literature, projects and study programmes (Anderson et al., 2019)
engagement (Miller et al., 2011); higher engagement (Bonet & Walter, 2016); (Wolaver& Finley, 2020)	developmental education, more college credits & certifications (Price & Tovar, 2014); higher student a reflection tool (Weber & Myrick, 2018)	critical thinking (Kilgo, et al., 2019)	integrated thinking and connections to the living environment (Wolaver& Finley, 2020)
greater student engagement (Miller et al., 2011)	academic progress of LGBTQ+ students (Kilgo et al., 2019); increasing senior students' academic GPA	discipline-specific reasoning skills (Knouse, 2018; Armstrong-Mensah et al., 2019), critical thinking (Henderson, 2017)	connect academic and out-of-class lives (Ribera, et al., 2017)
		reflecting critically on past experiences (Ferrari & Fine, 2016)	
	developing academic skills (Lane & Miller, 2019)	developing students critical inquiry (Kapell et al., 2017)	
student engagement (Miller et al., 2011)	higher GPA (Fassett et al., 2020)	critical thinking (Kilgo et al., 2019)	applying what students have learned in lessons in a working environment (Henderson, 2017)
		critical thinking (Kapell et al., 2017)	
student engagement (Garvey et al., 2018; Brckalorenz et al., 2017)		critical thinking (Kilgo et al., 2019)	

Job-readiness skills	Persistence and retention	Attendance	High graduation rates
	short-term effects on retention (Bonet & Walter, 2016); higher rates of retention (Ribera et al., 2017); positive impacts on retention (Wolaver& Finley, 2020)	lower absenteeism (Bonet & Walter, 2016); positively affecting attendance at university (Sweat et al. 2013)	students' progress towards graduation (Wolaver& Finley, 2020); limited evidence (Bonet & Walter, 2016)
preparation for the labour force (Armstrong-Mensah et al., 2019); promoting career goal setting			
	increasing retention rates (Wismath & Newberry, 2019)		
increasing the probability of the student planning to start a job after			

Time management				time using efficiently (Weber & Myrick, 2018)			time developing management (Lane)	time developing management (Simons et al., 2020)		
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Writing-Intensive Courses:

Three studies mentioned the effects of writing-intensive courses. According to Anderson, Anson, Gonyea, & Paine [2016], attending writing-intensive courses affect students' experiences with other HIPs. For instance, by encouraging students to respond to well-designed prompts and participating in campus activities, students gain experience in common intellectual experiences. Also, writing assignments linked to internships, study abroad or other HIPs help students to better understand the other HIPs. Moreover, this practice enhances the ability to express oneself clearly and effectively by writing and speaking, to think analytically and critically, to learn independently, to understand oneself and other people from other racial or ethnic backgrounds. Leon [2020] studied the results of performing low-risk writing (LSW) assignments in writing-intensive courses and found that these results have a positive impact on professors as well as students. A simplified assignment design creates a more engaging classroom and reduces pressure on students and professors. In addition, LSW assignments increase knowledge transfer, support the established curriculum, and make it accessible to professors. Additionally, the main purpose of Perrotta's study [2020] was to examine whether HIPs involving writing-intensive courses and undergraduate research foster engaged learning with asynchronous discussion boards in online history classes. As a result, supporting the writing-intensive courses with asynchronous discussions that provide feedback, clear guidelines and rubrics encourage student-faculty-peer interaction.

Service learning:

In eight studies, the effects of service learning were examined. According to Anderson, Boyd, Ariemma Marin, & McNamara [2019], there were three terms that attracted attention in the weekly reflections of the students who took part in the service learning projects. These were collaboration, communication and connection. Although the students wrote the weekly reflections individually, 92% of the participants used the pronoun "we". Hence, students worked collaboratively while brainstorming, developing materials, and debriefing experiences during the service learning projects. Also, students stated that they were in contact with each other and with the K-12 students they worked with, and this communication resulted in high-level student learning. Despite the fact that these projects are not course-based, it has been observed that the students still make connections between the projects and the literature and students' study programmes. Moreover, it was emphasised in the study that service learning supports critical thinking, teamwork, problem-solving skills, written and oral communication, and integration of learning. Additionally, through service learning, students' opportunities to gain experience in solving real-world problems increase while serving the needs of the society, their academic motivation increases, their engagement enhances, their sense of social responsibility develops, and they become aware of their professional responsibilities in social contexts [Henderson, 2017]. Alston & Ericksen [2019] remarked that students participating in

service learning think more positively about their learning than students who do not participate. Through service learning, students are not only prepared to become good community citizens but also their self-awareness, civic-awareness and self-efficacy increase. In addition, Ribera, Miller, & Dumford [2017] stated that service learning is positively associated with a higher sense of peer belonging and institutional acceptance especially for first-year students and it makes students more educationally potent while fostering learning, development and persistence among students. In her study, Knouse [2017] included the positive effects of service learning on linguistics. She stated that thanks to this course, students have a chance to re-evaluate their attitudes towards language learning and bilingual education, overcome their reluctance and fear of speaking with a native speaker, gain confidence in their communicative abilities. Most importantly, students learn a lot about diversity by being exposed to in linguistically, religiously, racially and socioeconomically different communities. Simons, Marshall, Blank, & Weaver [2020] examined the effects of academic-based service learning (ABSL) which combines academic study with community service, cultural-based service learning (CBSL) which combines diversity experiences with service learning and experiential learning (EL) outcomes in psychology courses. The study revealed that ABSL and CBSL provide students with opportunities to relate course content to the context of service, and this contributes to students' development of problem-solving skills and civic responsibility while providing a more detailed understanding of inequalities in society. In addition, adding diversity content to the service learning course enables students to examine the relationship between power and privilege in the course and service context. In this way, it will contribute to students' racial awareness, the effect of Whiteness, the general cognitive attitude towards diversity and empathetic responses to racial oppression. Furthermore, service learning is effective in the development of interpersonal and multicultural communication skills, charitable behaviour [Nelson Laird, BrckaLorenz, Zilvinskis, & Lambert, 2014], leadership skills, civic and social identity, career discernment [Trager, 2020] and students' academic motivation [Henderson, 2017].

Learning Communities:

Eight studies mentioned the effects of learning communities on learning. According to Einbinder [2018], learning communities enhance collaboration abilities, pedagogical and interdisciplinary knowledge, positive mentoring experiences, trusting relationships between and among the participants and job satisfaction. As Priest & de Campos Paula [2016] mentioned that learning communities contribute to student success, a sense of community, friendships, student interaction, interaction with faculty and satisfaction with the college experience. They also provide a positive learning environment, allow students to engage in diverse perspectives, increase self-awareness of their own learning and growth. Miller et al. [2011] found in their study that learning communities are not as engaging and motivating as undergraduate studies and internships. It was also stated that students do not actively participate in learning communities as much as they do in undergraduate studies and internships. Additionally, Wolaver & Finley [2020] found that students joining learning communities in their first year completed an average of 1.5 times more HIPs by the end of their senior year than those who did not. This shows that learning communities are increasing the motivation and engagement of students for HIP participation. In addition, students participating in this practice are more likely to conduct research with faculty, hold leadership positions, and interact with students of different racial and ethnic backgrounds. Also, learning communities have positive impacts on first-year student success, retention, engagement, collaboration with peers and faculty,

integrated thinking and connections to their living environment. According to Price and Tovar [2014], learning communities practice is a popular way for faculty to collaborate with each other and for students to collaborate in the classroom. According to their research, learning communities allow students to complete developmental education courses more successfully and earn more college credits and certifications. Moreover, according to the results of Bonet & Walters's [2016] research, with higher participation, lower absenteeism, and higher student success, engagement and persistence, learning communities have a positive impact on student learning outcomes. Furthermore, they claimed that learning communities have short-term effects on retention and there is "limited evidence" of positive effects on long-term effects, such as graduation rates [226]. While sharing some results of a research, Ribera et al. [2017] stated that although the study was limited to a single institution, students who attend learning communities are more likely to perceive higher levels of peer and faculty support, faculty and classroom comfort, empathetic faculty understanding and lower isolation. It was also stated that participating in a learning community positively affects students' sense of peer belonging and institutional acceptance. In addition, Kilgo, Linley, Renn, & Woodford [2019] announced that learning communities are positively related with cognitive growth, development and critical thinking. Sweat, Jones, Han, & Wolfgram [2013] added that students' participation in learning communities positively affected their academic performance, participation in productive educational activities, attendance at university, and satisfaction with the university experience. Also, students of color, fraternity and sorority members, full-time students, students in pre-professional majors, and students with two or more majors, freshmen from families with lower levels of parental education, and students living on campus are more likely to join learning communities.

e-Portfolio:

It is possible to see the positive effects of e-Portfolio on student learning in two studies. According to Weber & Myrick [2018], using e-Portfolios effectively can stimulate thinking and foster intellectual and personal growth while improving the strength of other HIPs, such as service learning, internships, diversity experiences, first year seminars and experiences. Moreover, for students, e-Portfolio has become a reflection tool where they can continuously record and track their achievements, evaluate themselves, share these achievements with others, and use their time efficiently due to its online use feature. It also helps students to set more conscious and realistic goals for themselves, while increasing their motivation to realise the activities they write in e-Portfolios. As Rivera & Leobick [2017] mentioned, since e-Portfolios are self-directed tools by students, they also assume the responsibility and leadership of students' own experience and learning.

Undergraduate Research:

The effects of undergraduate research were examined in eight studies. The results of Miller et al.'s [2011] study indicated that undergraduate research promoted greater student engagement than service learning and learning communities. Also, while it was rated as having higher level of active participation and intrinsic motivation than service learning and learning communities, it was perceived less relevant to life than internships and service learning. It was pointed out that undergraduate research enables students to learn content, develop discipline-specific reasoning skills and practices while working collaboratively [Knouse, 2017; Armstrong-Mensah, Ramsey-White, & Alema-Mensah, 2019]. Moreover, undergraduate research was positively related to senior students' academic GPA [Fassett, Haeger, &

BrckaLorenz, 2020]; enhances personal academic growth, confidence in foundational research methods, interest in graduate education, preparation for the labour force [Armstrong-Mensah et al., 2019]; promotes career goal setting, critical thinking and academic skills, such as the ability to conduct a research and understand scientific findings [Henderson, 2017]; helps to connect students' academic and out-of-class lives and encourages them to have meaningful conversations with faculty and peers [Ribera et al., 2017]. According to Nelson Laird et al. [2014], undergraduate research with faculty offers students the opportunity to practice newly learned knowledge as underclass students, to consolidate research skills that increase the productivity of their institutions, to combine faculty mentoring, peer collaboration and physical space, such as laboratories and libraries into a single project. However, Fassett et al. [2020] added that undergraduate research has negative or no relationships with reflective, integrative and higher-order learning.

Diversity Experiences (Study abroad):

Four studies showed how study abroad experiences effect students' learning. It was claimed in the study of Ferrari & Fine [2016] that short-term study abroad experiences can be more effective than longer programs if they deliberately engage students with host families, cultural venues, or if students use the host country's mother tongue. Moreover, while this research supported that short-term study abroad experiences shape the global perspectives of education leaders and foster a self-authorised worldview influencing the way they run schools, it remarked that they can also be effective for students to learn from each other, reflect critically on past experiences, and acquire the skills necessary to be agents of social change. The benefits of studying abroad were listed as cultural adaptability -the ability to get used to different cultures from their culture-, self-efficacy, intellectual and personal growth in the study of Cotten & Thompson [2017]. Furthermore, Fassett et al. [2020] was pointed out that while studying abroad is positively associated with reflective and integrative learning, it is negatively associated with higher-level learning.

First Year Seminars and Experiences:

Three studies highlighted the effects of first year seminars and experience on learning. Wismath & Newberry [2019] stated that the first-year seminar course is an effective tool in increasing retention rates, as it assists freshmen in their transition from high school to college and university. It also enables students to engage with their peers and the wider community through innovative and active learning opportunities, while providing opportunities for integrating students with the campus culture, engaging in academic participation, and social interaction. Moreover, Lane & Miller [2019] agreed with Wismath & Newberry that first year seminars facilitate students' transitions to universities and colleges. According to them, these seminars facilitate this transition by developing academic skills, such as study and writing skills, time management, enabling students to use campus resources, and supporting working with faculty, staff and students. Additionally, according to Kapell, Boersma, DeVita, & Parker [2017], the purpose of designing these seminars is to help students develop their cognitive abilities and to develop their critical inquiry.

Internships:

In six studies, the positive effects of internships were declared. Henderson [2017] stated that thanks to the internships, students have the opportunity to apply what they have learned in lessons in a working environment. In this way, students gain experience in developing the skills

they will need in their areas of expertise, where and how they should be applied. In addition, during the internships, students have the opportunity to work with mentors, supervisors and coaches who are experts in their fields. Moreover, Miller et al. [2011] stated that internships increase student engagement and listed the possible reasons for this as academic effort, active participation, collaborative learning, relevance, student-faculty interactions and motivation. Furthermore, through participation in an internship, students acquire content knowledge, time-management, communication skills, cultural competence and responsibility [Simons et al., 2020]; cognitive growth, development and skills like critical thinking [Kilgo et al., 2019], openness to diversity, socially responsible leadership skills, sense of independence and professional development [Nelson Laird et al., 2014]; higher GPA [Fassett et al., 2020]. Fassett et al. [2020] also remarked that participation in an internship increases the probability of the student planning to start a job after graduation.

Collaborative Assignment and Projects:

Two studies addressed the effects of collaborative assignments and projects. It was mentioned by Kapell et al. [2017] that the purpose of collaborative assignments and projects is to take advantage of the fact that there is so much to learn about and from the insights of collaborators while working as a team. Also, they claimed that participating in cooperative learning develops critical thinking and intercultural effectiveness. Price & Tovar [2014] declared that participation in active and collaborative learning are positive predictors of institutional graduation rates.

Capstone Courses and Projects:

Four studies mentioned the positive effects of capstone courses and projects on learning. Kilgo et al. [2019] pointed out that capstones projects experiences have been positively associated with cognitive growth, development and critical thinking. In addition to increasing student engagement [Garvey, BrckaLorenz, Latopolski, & Hurtado, 2018; BrckaLorenz, Garvey, Hurtado, & Latopolski, 2017], capstones courses and projects are reflective as they allow students to use high-level skills in knowledge, writing and speaking practices and is therefore valued by faculty, staff and students [Fassett et al., 2020].

Which Effects Do LC of HIPs (<6) Have?

The results of studies addressing 17 effects of 14 LC of HIPs were shown in Table 3 and explained in detail below.

Table 3. The effects of LC of HIPs

Positive learning environment	Leadership of learning	Communication	Retention and graduation	Critical thinking	Collaboration	
		E, P	E, P	E	E, P	LC HIPs1-Einbinder, 2018 (E); Price & Tovar, 2014 (P)
X	X					LC HIPs2-Priest & de Campos Paula, 2016
		X				LC HIPs3-Dupont & Rodenborg, 2020
		X			X	LC HIPs4-Miller et al., 2011
		X				LC HIPs5-Perrotta, 2020
			X			LC HIPs6-McDaniel & Van Jura, 2020
		X			X	LC HIPs7-Knouse, 2018
				X	X	LC HIPs8-Alston & Ericksen, 2019
		X				LC HIPs9-Farrow & Burt, 2018
						L.C HIPs10-Henderson, 2017
		X				LC HIPs11-Kilgo et al., 2019
						LC HIPs12-Ribera et al., 2017
						LC HIPs13-Simons, et al., 2020
		X			X	LC HIPs14-Trager, 2020

Diverse perspectives		X					X	X						
Personal growth		X					X	X					X	
Transformational learning		X					X		X					
Sense of belonging		X										X		
Leadership skills		X												
Engagement	P			X	X									
Career relevance			X	X						X			X	X
Motivation				X										
Problem solving								X					X	
Academic success											X			

Social responsibility							X						X	X
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LC of HIPs 1 (collaborative assignments and projects, learning communities):

The effects of LC of HIPs 1 were mentioned in two studies. According to Einbinder [2018] and Price & Tovar [2014], collaborative learning and learning communities enhance collaborative work, communication between peers and student-faculty interaction, retention and graduation rates. In addition, while Einbinder [2018] remarked that LC of HIPs foster critical thinking skills, Price & Tovar [2014] mentioned engagement as one of the effects of LC HIPs 1.

LC of HIPs 2 (undergraduate research, learning communities):

Priest & de Campos Paula [2016] stated that LC of HIPs 2 allow students to engage with diverse perspectives while helping them become aware of their own learning and personal growth leading to be a leader of their own learning. This creates not only a sense of belonging, but also a positive learning atmosphere for students. Through LC HIPs 2, students have the opportunity to practice leadership with one another providing transformational learning.

LC of HIPs 3 (undergraduate research, internships):

According to Dupont & Rodenburg [2020], participation in LC of HIPs 3 allow students to begin their first semester by establishing supportive relationships with faculty and peers, and to be successful in postgraduate opportunities.

LC of HIPs 4 (service learning, undergraduate research, learning communities, internships):

Miller et al. [2011] remarked that academic effort, collaborative shared knowledge, being related to the long-term career plans, active participation, student-faculty contact promote student engagement. Therefore, undergraduate research and internships are more engaging than service learning and learning communities due to their career relevance, active participation, collaborative learning and motivation-enhancing features.

LC of HIPs 5 (undergraduate research, writing-intensive courses):

Perrotta [2020] affirmed that writing-intensive courses by implementing asynchronous discussion boards promote student interaction with peers and faculty. Also, thanks to detailed feedback on discussion posts, maintaining a strong social presence in online courses and highlighting campus resources, online faculty supports engagement of students.

LC of HIPs 6 (internships, undergraduate research, study abroad, service learning):

McDaniel & Van Jura [2020] stated that although the compensatory effects of LC of HIPs 6, such as academic achievement, learning perceptions and retention were not manifested in college graduation, participation in these practices increase graduation rates.

LC of HIPs 7 (service learning, undergraduate research):

LC of HIPs 7 foster students to communicate and collaborate with other members in the community, which leads to personal enlightenment. Moreover, the participants of these practices take on the responsibility of advocating others with different realities from their own, while trying to utilize their newly acquired knowledge in a more empathetic way [Knouse, 2017].

LC of HIPs 8 (internships, 1st year seminars and experiences, service learning):

According to Alston & Ericksen [2019], collaboration, critical thinking, diverse perspective, personal growth and problem solving are the benefits of LC of HIPs 8. Also, increased awareness is another benefit of HIPs, which allows students to process and regulate their feelings. Engaging in inter-professional collaborations, critical thinking skills and intimate experience with real life problems which students are charged with resolving are the additional benefits of the LC of HIPs 8.

LC of HIPs 9 (service learning, diversity/global learning, internships):

Farrow & Burt [2018] asserted that LC of HIPs 9 demand interaction with others and this interaction allows students to observe how the materials they are studying do work in a variety of settings.

LC of HIPs 10 (undergraduate research, internships, study abroad, service learning, collaborative assignments & projects):

Henderson [2017] stated that discipline-specific (i.e. engineering-related) practices and long-term participation in these practices facilitate postgraduate career commitment in engineering. However, according to him, other commonly elevated high-impact practices, such as research experiences, were not found to be significantly related to post-graduation employment.

LC of HIPs 11 (internships, undergraduate research, learning community, senior experience, study abroad):

Kilgo et al. [2019] argued that although internships, senior experience, study abroad, learning community, and undergraduate research have an impact on student learning and academic development, these practices have less impact on LGBTQ+ students than other subpopulations. In addition, among the mentioned practices, only the instructor relations in undergraduate research have a positive effect on the academic development of LGBTQ+ students.

LC of HIPs 12 (learning communities, undergraduate research, service learning):

Ribera et al. [2017] stated that participating in a learning community and a service learning project was positively associated with students' sense of peer belonging and institutional acceptance. In addition, according to the study, although research with faculty was positively associated with a stronger sense of institutional acceptance, it had no effect on peer belonging.

LC of HIPs 13 (service learning, internships):

Simons et al. [2020] declared that LC of HIPs 13 enhance intercultural and interpersonal interaction, ethnocultural identity and understanding of diversity content of students. Service learning offers students the opportunity to relate the course content to the service context, to gain problem-solving skills, to develop empathic understanding and civic responsibility. With experiential learning, students have the opportunity to learn about different careers.

LC of HIPs 14 (integration of service learning and internship, a community-based internship (CBI)):

Trager [2020] pointed out that participation in a CBI affects the university, community partners and undergraduate students. It was declared that thanks to the CBI, the university is able to meet administrative needs and establish a closer link with the community. CBI has also helped universities to provide work experience preparing students for business and remain committed to their civic mission. For community partners, new ideas from students and increased work performance have been beneficial. Students, on the other hand, develop professional skills, encounter career differentiation opportunities and gain access to networks related to their professional fields. Also, students develop a sense of civic identity as they confront social issues and power dynamics.

Which Effects Do EC of HIPs (≥ 6) Have?

The results of studies addressing 16 positive effects of EC of HIPs were shown in Table 4 and explained in detail under five main headings.

Table 4. The effects of EC of HIPs

	Effects of EC of HIPs
Achievement-focused effects	being positively related to students' graduation rates and retention (Dinh & Zhang, 2021; Kilgo et al., 2015; Myers et al., 2019; Larson et al., 2020; Murray, 2015; Nelson Laird et al., 2014; Sweat et al., 2013); not having positive effects on students' graduation rates and retention (Wu & Park, 2019; McDaniel & Van Jura, 2020; Johnson & Stage, 2018). higher academic achievements (Nelson Laird et al., 2014; Shavers & Mitchell, 2019; Dinh & Zhang, 2021; Zilvinskis & Dumford, 2018; Garvey et al., 2018; Armstrong-Mensah et al., 2019); strong social network and close friendships (Conefrey, 2021); increased cognitive and academic gains (Fassett et al., 2020); attending HIPs makes students more successful (Smith et al., 2017); be positively associated with student academic achievement (Johnson & Stage, 2018); HIPs and academic achievement differed by class status (i.e., freshman/second year and junior/senior) and gender (Gipson & Mitchell, 2017).
Motivation-focused effects	making students' education more meaningful since HIPs prepare students for their post-graduation careers (Bampasidou et al., 2016; Murphrey et al., 2016); thanks to HIPs, students applied and made sense of what they learned (Armstrong-Mensah et al., 2019). promoting student engagement and motivation (Murphrey et al., 2016; Myers et al., 2019; Armstrong-Mensah et al., 2019; Conefrey, 2021; Garvey et al., 2018; Ishaq & Bass, 2019; Rodriguez & Koubek, 2019; Shavers & Mitchell, 2019; Murray, 2015); having a meaningful mentoring relationship with faculty members provides the student with self-confidence, motivation and engagement (Sweat et al., 2013); although all HILPs positively affect the engagement of students to transfer, only student-faculty interaction was ineffective (Zilvinskis & Dumford, 2018).

Competence/skills development-focused effects	providing transformative learning through bridging the knowledge and skills gained throughout a university experience (Zilvinskis & Dumford, 2018), carrying one's curriculum participations into the post-university transition (Myers et al., 2019), connecting the course materials with real life experiences (Goulette & Denney, 2018; Murphrey et al., 2016), transferring the knowledge students have acquired at higher rates (Wu & Park, 2019), increasing the likelihood of a new college graduate being hired (Kapell et al., 2017). fostering leadership skills are enhanced by leadership experiences and group work component of HIPs (Bampasidou et al., 2016). providing student and faculty/ peers/ community interaction (Dinh & Zhang, 2021; Armstrong-Mensah et al., 2019; BrckaLorenz et al., 2017); making students feel valued and validated softening cold classroom environments and facilitating positive learning for all students; leading to receiving higher GPAs and having greater confidence in students' academic abilities (Garvey et al., 2018). thinking critically (Bampasidou et al., 2016; Murphrey et al., 2016; Kapell et al., 2017; Kilgo et al., 2015; Myers et al., 2019; Fassett et al., 2020; Shavers & Mitchell, 2019). developing time management (Bampasidou et al., 2016). developing students' job-readiness skills (Bampasidou et al., 2016; Murphrey et al., 2016; Armstrong-Mensah et al., 2019; Miller et al., 2018; Dinh & Zhang, 2021; Goulette & Denney, 2018); deepening one's learning to include situations one may face in the future careers (Goulette & Denney, 2018).
Personal development-focused effects	enhancing personal growth and/or social development (Miller et al., 2011) through participating in activities outside of the classroom for a certain period of time, enabling students to apply what they have learned or making sense of their learning and providing metacognitive gains (Armstrong-Mensah et al., 2019); gaining social, personal and academic experience results in greater connection and investment in university experiences (Garvey et al., 2018). appreciation for diversity (Shavers & Mitchell, 2019; Morgan et al., 2021; Myers et al., 2019; Kilgo et al., 2015; Miller et al., 2011); being willing to be exposed to and tolerant of perspectives different from their own; had higher levels of civic engagement in the attitudinal and behavioural dimensions (Myers et al., 2019). becoming a leader of one's own learning thanks to evaluating one's strengths and weaknesses, and being expected to make adjustments on one's own to make the most of one's experience (Goulette & Denney, 2018). being aware of one's own skills, abilities and beliefs through improving students' ability to become more aware of their personal values and beliefs about a particular topic or problem (Goulette & Denney, 2018); increasing students' self-evaluation of their academic abilities (Conefrey, 2021).
Learning process-focused effects	enhancing learning by supporting cumulative student learning (Ishaq & Bass, 2019), with the projects in and outside of the classes (Armstrong-Mensah et al., 2019); collaborative learning and undergraduate research were beneficial to students' learning while study abroad, internship, service learning and capstone courses and projects had lower impact on the learning of students (Kilgo et al., 2015; Rodriguez & Koubek, 2019). encouraging collaboration among students through exposing students to recognising different perspectives that they had never thought of before (Goulette & Denney, 2018); learning from each other as much as learning from teachers while working collaboratively (Rodriguez & Koubek, 2019).

Achievement-Focused Effects:

Ten studies examined the relationship between student graduation rates, retention and HIPs. Seven of these studies have shown that HIPs are positively associated with student retention and/or graduation rates, promote retention and graduation rates among racial/ethnic minority college students, and increase retention, particularly among racially underrepresented students. On the other hand, three studies found that students involved in HIPs were more likely to complete college within six years compared to their non-included peers, but there was no evidence of compensatory effects among students included in HIPs. There was statistically no significant relationship between student learning gains and retention in the HIPs implemented courses and the relationship between some HIPs, such as first-year seminars or study abroad and retention was not clear. In eleven studies, participation in HIPs was associated with higher academic achievement. These studies stated that HIPs increase academic achievement due to the opportunity to establish strong social networks with peers, provide cognitive and academic gains, such as critical thinking and GPA, and enable low-achieving students to be more successful than students who do not participate in HIPs. In addition, while first-year seminars, writing-intensive courses, learning communities, and service learning are positively associated with student academic achievement, the associations between HIPs and academic achievement differs by class status (i.e. freshman/second year and junior/senior) and gender.

Motivation-Focused Effects:

Three studies noted that HIPs make students' education more meaningful. The reason for this is explained as HIPs prepare students for their post-graduation careers and enable students to make sense of what they have learned by applying. Additionally, eleven studies highlighted that HIPs promote student engagement and motivation. It has also been stated that having a meaningful mentoring relationship with faculty members will motivate students. On the other hand, one study claimed that although all HIPs positively affect the engagement of students to transfer, only student-faculty interaction was ineffective.

Competence/Skills Development-Focused Effects:

Six studies addressed the transformative learning effect of HIPs. This effect was explained in studies as the ability of students to carry the knowledge and skills they have gained throughout their university years to post-university life and to associate course materials with real life experience. It was noted that transferable skills developed with HIPs are sought after by employers in their recruitment processes, further increasing the likelihood of a new college graduate being hired. Leadership skills provided through HIPs are discussed in one study. The leadership experiences and group work component provide opportunities for students to develop meaningful career skills. Four studies affirmed that student participation in HIPs was positively correlated with student and faculty/ peers/ community interaction. According to these studies, HIPs provide opportunities to interact with faculty, a prerequisite for academic development and engagement, soften cold classroom environments, facilitate positive learning, increase the likelihood that students will receive higher GPAs and be more confident in their academic abilities. Seven studies showed that participation in HIPs encourages students to think critically, and one study declared that HIPs improve time management. According to six studies, HIPs enable students to experience situations they may face in their future careers, improving job-readiness skills and preparing students for future careers.

Personal Development-Focused Effects:

Three studies indicated that participation in HIPs enhances students' personal growth and/or social development. Students apply what they have learned, obtain metacognitive gains, have social, personal and academic experiences, and thus give more importance to their university experience. Five studies emphasized that HIPs were positively associated with an appreciation of diversity, and students who consistently participated in diversity experiences have higher levels of civic engagement in attitudinal and behavioural dimensions. One study emphasized that through HIPs students are often asked to critically reflect on their high-impact experiences before, during and after the completion of their project. Through self-reflection, students assess their strengths and weaknesses, make self-adjustments to get the most out of their experience, and become leaders of their own learning. Two studies noted that HIPs improve students' ability to be aware of their own skills, abilities, beliefs, and increase students' self-evaluation of their academic abilities.

Learning Process-Focused Effects:

Four studies stated that HIPs enhance learning. HIPs foster learning through projects in and outside of the classes and empower students by enriching their overall academic experience. In addition, while study abroad, internship, service learning and capstone courses and projects have lower impact on students' learning, collaborative learning and undergraduate research are more effective on students' learning since they allow students to integrate their learning across multiple levels and domains. Two studies showed that HIPs encourage collaboration among students, so that students are exposed to recognising different perspectives they had never considered before, and they have the opportunity to learn from each other as much as they learn from their teachers.

CONCLUSIONS AND DISCUSSION

One of the biggest concerns in the field of education recently is whether colleges and higher education institutions offer educational programs that provide their students with the basic skills and competences necessary to meet the requirements of the labour market and achieve their goals in a globalised world. In an ever-changing world, while the needs of the labour market, the expectations of society and the goals of people change rapidly and constantly, the teaching process should not be carried out with traditional methods within the classroom walls. Today, many researchers have carried out various studies to determine the validity of HIPs in undergraduate education and their positive results for students.

The aim of the study was to examine the studies on HIPs, to determine the effects of single HIPs (RQ1), LC of HIPs (RQ 2) and EC of HIPs (RQ3). In this way, it will contribute to developing a theoretical framework for high-impact learning by responding to the current lack of integration in this field. The findings obtained in the light of the research questions as a result of our literature review can be concluded as follows:

In response to the first research question, 18 effects were determined on which single HIPs enhanced. The detected effects can be listed as: communication, collaboration, problem solving, 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, high graduation rates, attendance, persistence and retention, job-readiness skills and time management. Also, critical thinking through 9 practices,

communication through 7 practices, and collaboration through 7 practices were the most promoted effects of single HIPs. Moreover, Learning communities (14 effects), Service learning (11 effects), and Internships (11 effects) were the single HIPs having the most and diverse impact while Capstone courses and projects (3 effects) and Collaborative assignments and projects (2 effects) were the single HIPs having the least impact. Furthermore, no study examined the direct effects of Common intellectual experiences and one study pointed out that undergraduate research and diversity learning have no or negative relationships with higher-order learning.

In response to the second research question, fourteen LC of HIPs with 17 positive effects were detected. These are increased collaboration, critical thinking, retention and graduation rates, communication, leadership of learning, positive learning environment, diverse perspectives, personal growth, transformational learning, sense of belonging, leadership skills, engagement, career relevance, motivation, problem solving, academic success and social responsibility. Additionally, communication through five LC of HIPs, collaboration through five LC of HIPs and career related opportunities through five LC of HIPs were the most common effects. Moreover, LC of HIPs 2 (undergraduate research, learning communities) through 7 effects and LC of HIPs 7 (service learning, undergraduate research) through 6 effects had the most and diverse effects while LC HIPs of 6 (internships, undergraduate research, study abroad, service learning), LC HIPs of 10 (undergraduate research, internships, study abroad, service learning, collaborative assignments & projects) and LC HIPs of 12 (learning communities, undergraduate research, service learning) through 1 effect had the least impact.

In response to the last research question, it has been detected that EC of HIPs lead to 16 positive effects which can be grouped under five main headings that are achievement-focused effects (graduation rates and retention, higher academic achievements), motivation-focused effects (meaningful education, engagement and motivation), competence/skills development-focused effects (transformative learning, leadership skills, student and faculty/peer/community interaction, thinking critically, time management, job-readiness skills), personal development-focused effects (personal growth and /or social development, appreciation for diversity, being a leader of one's own learning, being aware of one's own skills, abilities and beliefs) and learning process-focused effects (enhancing learning, collaboration). Except three studies which claimed that there is no significant relationship between HIPs and student graduation rates and retention, other findings demonstrated that EC of HIPs have a wide range of positive effects. EC of HIPs have the most competence/skills development-focused effects with their features of developing transformative learning, leadership skills, student and faculty/peer/community interaction, critical thinking, time management and job-readiness skills. Additionally, student engagement and motivation (in 11 studies), higher academic achievements (in 11 studies), critical thinking (in 7 studies), graduation rates and retention (in 7 studies) were the most common effects of EC of HIPs.

In conclusion, when the effects of single, LC and EC of HIPs were examined, it was clearly seen that while HIPs equip learners with field-based knowledge and job-readiness skills that can be transferred from university life to business life, they also enable students to recognise their own beliefs, skills and abilities, be leaders of their own learning, cooperate with society and their peers, respect differences, to solve problems they may encounter in real life by thinking critically. In this way, learners become competent individuals open to communication and

collaboration, respectful of different views, and able to meet the expectations of the rapidly changing world and business life.

LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

The use of inclusion criteria in the research to focus on the field of research studies on high-impact learning also causes limitations in the study. First of all, only articles were included in the scope of the research, and master's and doctoral studies in this field were not included. However, a review of master's and doctoral studies in this field can complement our findings. Secondly, this research was carried out by examining only English sources. Examining research in other languages on high-impact learning will not only add variety to the results of this study, but will also provide an opportunity to compare results from English sources with those published in other languages.

Finally, this review looked only at the relationships between HIPs and their effects on learning environments. However, other factors like demographic background were not included in this study. Therefore, this research can be a starting point for further investigation of other factors that may affect students' learning.

Despite the aforementioned limitations, the current review provides a clear overview of the effects of HIPs in learning environments, thus demonstrating the results of practices that can be implemented to make the learning process more effective and of high quality. The results of this review can form the basis for new research seeking to answer questions about how learning and coaching (see Dochy, Segers, & Arikan, 2022) should be more effective and permanent.

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