# Kampus Bertam

# **High-Impact Educational Practices in Higher Education Institutions: A Thematic Review**

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#### **ABSTRACT**

#### ARTICLE HISTORY

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#### **KEYWORDS**

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High Impact Educational Practices (HIEPs) have been identified as effective in providing positive educational results for students from diverse backgrounds across several institutions. Despite its effectiveness in teaching and learning, prior research revealed that there is still a lack of review papers discussing the trend in the application of High Impact Educational Practices (HIEPs), specifically in Higher Education Institutions. Therefore, this thematic review (TR) paper aims to discuss the most common High Impact Educational Practices (HIEPs) applied in teaching at the university by synthesizing the literature from 2019 to 2023 using ATLAS.ti 23. A keyword search, followed by a filter using inclusion criteria from SCOPUS, WoS, and Science Direct databases, identified 39 peer-reviewed journal articles. However, after the inclusion and exclusion processes, only 24 articles were considered to be used as the final articles to be reviewed. A thematic review of 24 articles identified 27 initial codes grouped into the five most practiced HIEPs in Higher Education Institutions worldwide. The five main themes are collaborative, service, experiential, research-based, and engaged learning. The results of this study will benefit future studies on the application of HIEPs in teaching at the university level. They can be the main guideline for developing a sustainable practice framework for applying HIEPs.

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# 1. INTRODUCTION

High Impact Educational Practices (HIEPs) are considered instructional strategies that significantly affect students' learning and foster their development (Ke et al., 2022). High impact educational practices (HIEPs) are defined as educational strategies that actively engage students in learning and link their learning to their personal and work lives. HIEPs benefit all students, including those from diverse and underrepresented groups (Kuh, G. D., 2008). Numerous institutions have shown that High Impact Educational Practices (HIEPs) efficiently deliver high-quality educational outcomes to students from various backgrounds. According to Riehle and Weiner (2013), high-impact educational strategies often span the college experience, include students in the learning process, and use active, contextual pedagogies. According to research, HIEPs promote higher academic engagement, comprehension, and resolve to help students excel in the classroom (Armstrong et al., 2019). Through various teaching methodologies, students are gradually allowed to participate in activities outside the classroom, promoting learning and individual growth. HIEPs are crucial in higher education institutions because they boost student engagement, encourage deeper learning and transferrable skills, raise retention and graduation rates, link theory and practice, promote inclusion, and improve career preparedness. These methods help students have a rich and fulfilling educational experience. Student engagement is a key factor in enhancing learning outcomes. When students are engaged, they are actively involved in the learning process, both mentally and emotionally.

High-impact educational practices (HIEPs) are used in universities and colleges worldwide. Many educational institutions have included these methods in their curriculum to improve the learning opportunities for their students since they understand the tremendous benefits of doing so. Eight key elements underpin the success of HIEPs practices: performance expectations set at appropriately high levels; significant investment of time and effort by students over an extended period; interactions with faculty members and peers about substantive matters; experiences with diversity; frequent, timely, and constructive feedback; periodic, structured opportunities to reflect and integrate learning; opportunities to discover the relevance of learning through real-world applications; and public demonstration of competence (Berlie et al., 2020). According to Kuh (2008), HIEPs require much time and effort from students in their academic work, increase teacher-student contact, engage with students from diverse backgrounds, apply their knowledge in real-world situations, and more. Despite its effectiveness in teaching and learning, prior research revealed that there still needs to be more review papers discussing the trend in the application of High Impact Educational Practices (HIEPs), specifically in Higher Education Institutions. Therefore, the underpinning of this paper is to discuss the most common High Impact Educational Practices (HIEPs) applied in teaching at the university in publications from the year 2019-2023 through the following research question:

RQ: What are the most common High Impact Educational Practices (HIEPs) applied in Higher Education Institutions from 2019 to 2023?

#### 2. MATERIALS AND METHODS

This study adopted a non-systematic review method, which is a thematic review. The term thematic review using ATLAS.ti 23 as the tool introduced by Zairul (2020) is implemented because the method of this study applies a thematic analysis procedure in a literature review. Clarke & Braun (2013) define thematic analysis as identifying patterns and constructing themes based on a thorough reading of the subject. The following step is to identify the

pattern and construct a category to understand the trend of High Impact Educational Practices (HIEPs) applications at the university level in publications worldwide. The tenets of the research are to analyse and interpret the findings to recommend future research in HIEPs. The selection of literature was performed according to several selection criteria including: 1) publication from 2019- 2023, and 2) Have at least one keyword(s) High Impact Educational Practices and university.

Table 1: Search strings from Scopus, WoS and Science Direct

SCOPUS	TITLE-ABS-KEY ( "high impact educational 23 results practice" AND "university" ) AND PUBYEAR > 2019 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE, "ar") )	_
WoS	"high impact educational practice" AND 8 results "university" (All Fields) and Open Access and 2023 or 2022 or 2021 or 2020 or 2019 (Publication Years)	
Science Direct	"high impact educational practice" AND 11 results "university"	

The literature search was performed in the Scopus, WoS, and Science Direct databases. The initial search yielded with 23 articles from SCOPUS, eight from WoS, and 11 from Science Direct. However, 18 articles were removed due to their premature results and anecdotes or because they did not discuss HIEPs applications at the university. Some of the articles were also found incomplete, or the full articles are not accessible, have a broken link that overlaps, or have incomplete metadata. Therefore, the final paper is to be reviewed down to 24 articles (table 1). The articles were uploaded in ATLAS.ti 23 as primary documents, and then each paper was grouped into 1) author; 2) issue number; 3) periodical, 4) publisher, 5) volume, and 6) year of publication. In doing so, the articles can be analysed according to the year they were published and the discussion pattern according to the year. The total articles are finalised and included in the final documents in the ATLAS.ti 23 is 24 documents.

Table 2: Inclusion and Exclusion Criteria

Inclusion	Exclusion		
1. Articles written in English	1. Articles written in other languages		
2. Article year of publications range	2. Published before 2019		
from 2019 to 2023			
3. Open access articles only	3. Paid access articles		
4. Full article journals only	4. Conference proceeding		

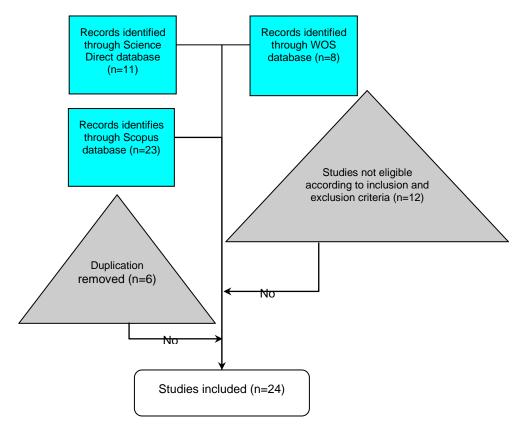


Figure 1: Inclusion and Exclusion Process in the Thematic Review

The classification of documents group in ATLAS.ti 23 has made sorting much more manageable and systematic (figure 2). 33 initial codes were generated during the first round of coding. Later, similar codes were merged, and the final codes became 27. Then, the codes were grouped into several themes to answer the research question: What are the most common High Impact Educational Practices (HIEPs) applied in Higher Education Institutions from 2019 to 2023? Contributed to a final of five main categories to answer the research question. Iteratively, the following six-step procedure for thematic review was carried out (Mohd Yusof et al., 2023):

- 1. Becoming familiar with the data
- 2. Generating basic codes
- 3. Searching for themes
- 4. Reviewing themes
- 5. Defining and naming themes
- 6. Writing the report

According to Ahmad S, Wasim et al. (2019), quantitative analysis involves numerical data, while qualitative analysis involves words, pictures, and objects. Thus, the findings of this review will be divided into two parts: Quantitative findings and Qualitative findings. Quantitative results entail analysing numerical data to identify and emphasise publication trends, which involves statistical evaluations of factors like publication frequency or other quantifiable aspects linked to the dissemination of the publications. Qualitative findings delve deeper into exploring themes. Using an inductive approach, themes naturally arise from a comprehensive examination of selected articles. This in-depth analysis explores the content of the publications, uncovering patterns, nuances, and underlying concepts that quantitative methods may overlook.

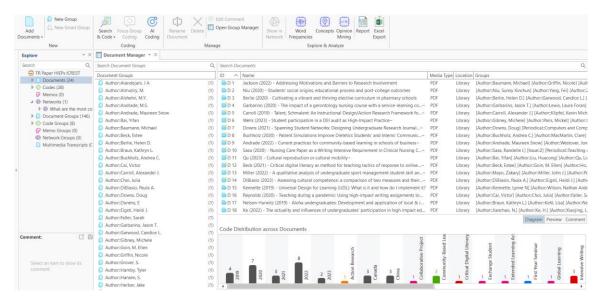


Figure 2: The Document Group Established from Mendeley Metadata

#### 3. RESULTS AND DISCUSSIONS

The global implementation of HIEPs in higher education institutions was outlined in this thematic analysis over the past five years. According to the publications selected, numerous HIEPs strategies have been used in university teaching and learning. The selected articles highlight the benefits of HIEPs in teaching and learning and current HIEP practices. Important practical ramifications of this study are also present. The results of this literature review shed light on potential HIEPs teaching strategies as well as the best methods for teachers to adopt when implementing HIEPs in teaching and learning. This study will also help university students to have a positive shift in their attitudes toward the benefits of HIEPs in preparing themselves for future-proof university graduates.

This review and its conclusions have added to the body of knowledge by providing insights into various facets of the HIEPs use at higher education institutions. Thus, this section provides a summary of the key findings of the thematic review. The qualitative results for the thematic evaluation will be supported by the quantitative findings at the beginning of this section.

# 3.1 Quantitative Findings

The pattern of regional dispersion indicates that High Impact Educational Practices (HIEPs) have been applied in Higher Education Institutions for quite some time in the American Country: United States and Canada. It is undoubtful that HIEPs were established by George Kuh in 2008 (Kuh & O'Donnell, 2013) and his colleagues at the Association of American Colleges and Universities (AAC&U). Recently, China and Saudi Arabia have begun to adopt it (figure 3). However, research on HIEPs in higher education institutions is still not widely acknowledged in Asia, particularly Malaysia, where there have been no publications on the use of HIEPs in higher education institutions available in the databases used in this research.



Figure 3: Articles Based on Country Published

The findings of this research show an increasing research trend for the year 2022. According to records, only three articles were published in 2023, which could be because some articles still needed to be written. Results demonstrate that research examines the use of HIEPs at higher education institutions, which are most common in the USA, followed by Canada and China. According to the publication trend by year, 2022 had the most publications, with eight for the year. Only four articles were published in 2019, compared to seven in 2020. In 2021, only two articles were published. It might be connected to the worldwide COVID-19 pandemic, which impacted the entire educational system. Nevertheless, the finding shows that Malaysia's study on applying HIEPs in teaching is unavailable.

Table 3: Paper breakdown according to countries and the year of publication

Country/Year	2019	2020	2021	2022	2023	Totals
Canada	1	1	0	1	0	3
China	0	1	0	1	1	3
Saudi Arabia	0	0	0	1	0	1
United States	3	5	2	5	2	17
Totals	4	7	2	8	3	24

The 24 research papers were checked in an iterative process in which comparisons were made for similarities and differences to ensure consistency. A list of publication years and their allocation into the themes can be found in Figure 4. The 27 initial codes were then divided into five major themes, which are:

- 1. Collaborative Learning
- 2. Service Learning
- 3. Experiential Learning
- 4. Research-based Learning
- 5. Engaged Learning

This study's findings show that studies on the application of HIEPs in Higher Education Institutions are discussing on various themes in Figure 4:

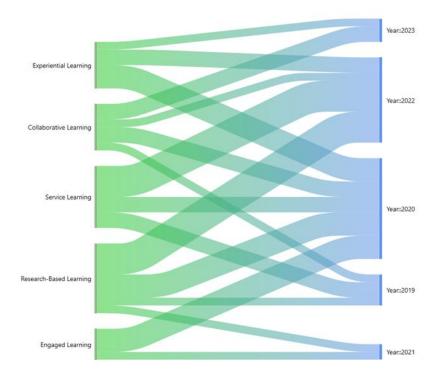


Figure 4: Year of Publications vs Themes

The publication year was used to evaluate the trend (figure 5). The analysis found that trends in service learning, collaborative learning, and research-based learning all began in 2019. There were no publications on engaged learning or experiential learning in 2019. In addition, research-based learning has grown significantly in popularity for HIEPs applications today, with nine publications since 2019.

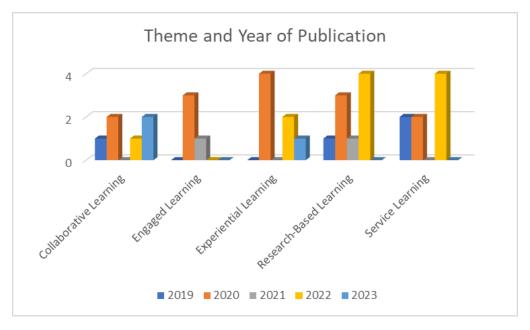


Figure 5: Themes and Year of Publications

# 3.2 Qualitative Findings

This TR paper reviewed publications and coded the patterns in the HIEPs application at higher education institutions. However, the future of HIEPs in education was not discussed.

The initial codes were recorded, combined, and categorized in multiple rounds. Since this study focused on elements thoroughly studied and investigated by researchers, codes that were rarely used and could not be categorised into any topic were eliminated. Results from quantitative investigations that were not statistically significant were also not included. Finally, five major themes emerged: (1) collaborative learning, (2) service learning, (3) experiential learning, (4) research-based learning, and (5) engaged learning. Each theme is investigated in further detail below and results outside of the themes or the evaluated articles will be referenced as needed for descriptive reasons.

The first round of coding produced 33 initial codes on various types of HIEPs applied in university teaching. The first step was to conduct a thorough analysis of all the selected articles and identify potential themes for each of the codes. Some similar codes were merged, and 27 final codes of HIEPs application were made. The following phase was to come up with, analyse, and define the overall concept. Finally, five major themes emerged, which will be discussed in detail in each section below.

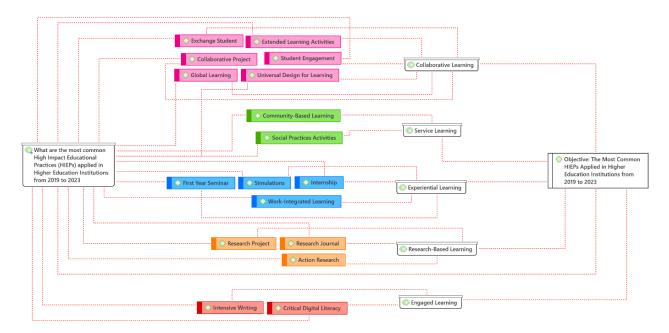


Figure 6: An Overview of Thematic Answer based on Research Questions

#### 3.2.1 Collaborative learning

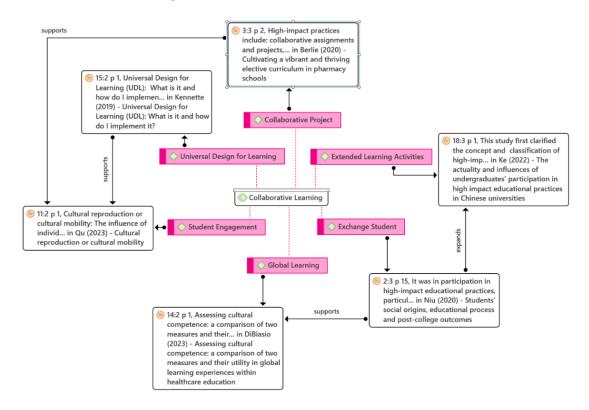


Figure 7: Theme 1-Collaborative Learning

The first theme that emerged from this study is collaborative learning. Collaborative learning is an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product (Laal & Ghodsi, 2012). Unlike traditional learning methods where students mainly learn individually, collaborative learning encourages active participation, interaction, and peer cooperation. In collaborative learning environments, students engage in discussions, share ideas, and jointly solve problems, drawing on the group members' diverse skills, knowledge, and perspectives. Collaborative learning could be applied in various ways through the collaborative project (Berlie et al., 2020), students' mobility through a students exchange program (Niu et al., 2020) or cultural mobility program (Qu et al., 2023), extended learning activities (Ke et al., 2022), global learning (DiBiasio et. al, 2023), and Universal Design for Learning (UDL) (Kennette & Wilson, 2019).

Berlie et. al. (2020) identified elective courses as an approach to promote collaborative projects. In order to maximize the benefits to students, faculty members, and the institution, electives must be intentionally planned and managed. Adopting a more strategic and attentive approach to electives may require significant discussion and debate. Ideally, electives are tightly aligned with the core curriculum, extending student knowledge and skills in tangible ways. Additionally, a vibrant and thriving elective curriculum will enable students to develop deeper skillsets, differentiate themselves upon graduation, and contribute to moving the profession forward. On the other hand, Qu et. al (2023) mentioned that in the process of college students' development, student participation and engagement is a crucial means to foster cultural mobility and are also the reason for the inequalities in academic accomplishment groups in the same type of university. This idea supports Niu's et. al (2020)

perspective on students participating in student exchange programs, which have been be remarkably effective in promoting a wide range of desired educational outcomes. Additionally, Ismail et.al, (2023) research found that collaborative design pedagogy is essential for improving students' quality in architectural design. It is also an effective learning method to increase motivation among students for student-centred learning and to develop critical, creative, and pragmatic thinking skills as individuals and as a team.

Furthermore, Kennette and Wilson (2019) promoted Universal Design for Learning (UDL) as one of the HIEPs approach to curriculum development which aimed at removing barriers in education, to make it accessible to the largest number of learners. UDL consists of three principles: multiple means of representation, multiple means of action and expression, and multiple means of engagement. When used to guide curriculum development, these principles provide access to learning to the widest possible audience by removing potential barriers and offering flexible paths to learning. Additionally, involvement in HIEPs and extended learning activities by undergraduates contribute to better learning (Ke et. al, 2022). Thus, HIEPs application is expected to benefit from collaborative learning. However, different deployment strategies must be clarified more thoroughly for a worldwide implementation.

#### 3.2.2 Service learning

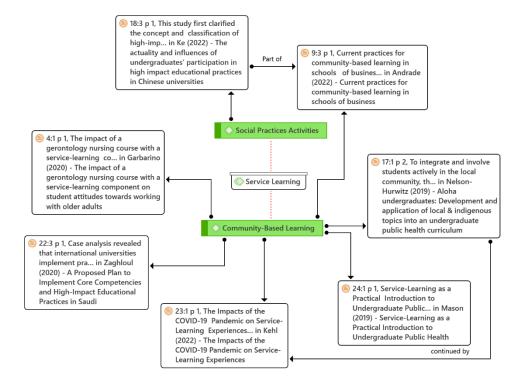


Figure 8: Theme 2-Service Learning

This research found that service learning becomes a Service-learning activity as one of the HIEPs strategies to engage students in service activities that simultaneously pursue two goals: (a) benefit to community stakeholders (e.g., agency, clients, neighborhood 3 residents) and (b) academic learning outcomes. The service experience provides a rich text from which academic lessons are learned through the interplay between theory and practice. The educational outcomes are derived from community service through reflection activities (Bringle, R. G., & Phillips, M. A., 2010). Several publications have discussed community-based learning (Kehl et. al, 2022; Zaghloul et al., 2020; Garbarino & Lewis, 2020; Nelson et

al., 2019; Mason & Dunens, 2019) and social practices in the context of service learning at the universities.

Ke et al. (2022) define social practice activities broadly. It refers to learning activities in off-campus situations that increase students' social experience or knowledge. This activity includes internship, social practice or investigation, community service, or volunteer activities. He added that the average educational practices of students who participated in social practice activities were higher than those of students who did not. On the other hand, most researchers discuss service learning specifically through implementing community-based learning activities. As community-based learning involves students' engagement with the community, it improves students' attitudes towards community members (Garbarino & Lewis, 2020). Though there has been wide adoption of community-based learning in teaching at the university, the information on how community-based learning has been effectively implemented, supported, and practiced at the school and university levels is still vague. More research on effective service learning or community-based learning frameworks is necessary.

# 3.2.3 Experiential learning

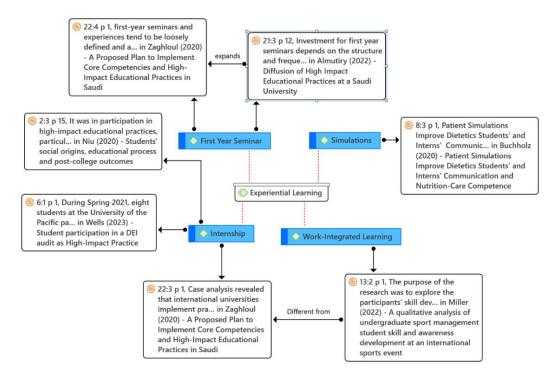


Figure 9: Theme 3-Experiential Learning

Students must learn by doing things. Though it is important to embed experiential learning into the teaching and learning process, what a student learns from a particular experience is frequently unique to how the student interprets that experience and is partially beyond the instructor's control (Gentry, J.W, 1990). Several discussions have been made on internships as one of the good practices for encouraging experiential learning among university students. Higher education researchers have also theoretically defined internship as one of high-impact educational practices (Kuh, 2008). Niu et al. (2020) research findings show that students with good social connections will completely champion their internship. Extensively, Wells et. al (2023) found that internships will effectively enhance students' personal growth for future career development. On the other hand, work-integrated learning is an additional strategy suggested by Miller et. al (2022) that will improve students' ability to translate theory into practice.

Zaghloul et al. (2020) argues that first-year seminars will enhance students' academic performance. However, later discussion shows that students practicing first-year seminars are more likely to learn more about the university's resources and will develop better time management (Almutiry et al., 2022). Though experiential learning can be low-tech and cost-effective, it also can be time-consuming (Buccholz, 2020). Nevertheless, some researchers highlighted the readiness of educators to shift the current teaching standard from an instruction paradigm to a learning paradigm through experiential learning. Therefore, educators must be more selective in how they utilize experiential learning to meet the needs of their students and improve their performance.

# 3.2.4 Research-based learning

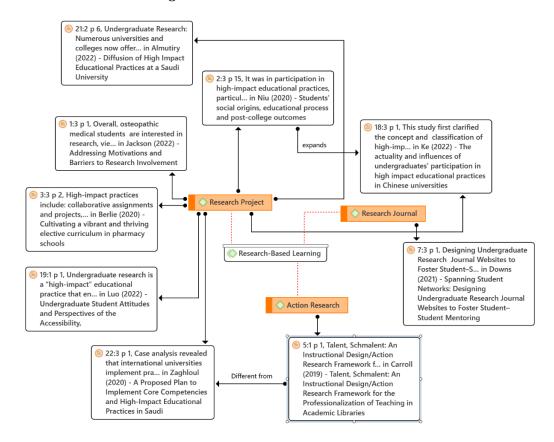


Figure 10: Theme 4-Research-Based Learning

Various means of applying research-based learning were discussed in the literature. Most researchers applying research projects as HIEPs at the university (Luo et al., 2022; Jackson et al., 2022; Almutiry et al., 2022; Ke et al., 2022; Niu et al., 2020; Berlie et al., 2020 & Zaghloul et al., 2020), while some other researchers discussing on research journals (Downs, 2021) and action research (Caroll, 2019). Integrating research-based learning into teacher education courses, for example, can be seen as part of an international effort to educate teachers for a fast-changing reality in schools, with continuous needs for development in the classroom (Brew, A., & Saunders, C., 2020).

Numerous universities and colleges now offer students from every discipline to participate in research. The opportunity is most common within scientific subjects (Almutiry et al., 2022). Some medical students are interested in conducting research, value the experience, and believe it will help them in their future professional endeavors (Jackson et al., 2022 & Luo et al., 2022). Supporting that, research projects embedded in students' assignments can assist

students' professional career growth in the future (Berlie et al., 2020). Conversely, action research can be highly helpful in resolving educational challenges at the school. Action research is problem-based and results-focused, to assist educators in creating practical answers to real issues they experience in the classroom (Caroll, 2019). Research journals, which are typically more important to postgraduate students, were proposed by Downs (2021) as another option for research-based learning. In conclusion, research-based learning has become an important HIEPs strategy for both undergraduate and postgraduate students to enhance their professional skills.

# 3.2.5 Engaged learning

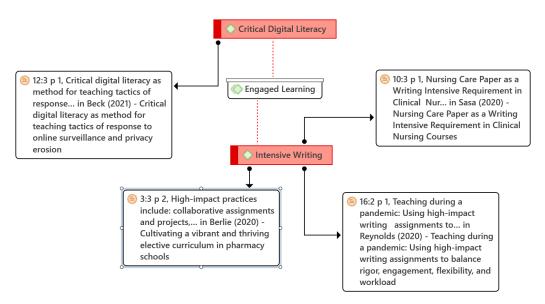


Figure 11: Theme 5-Engaged Learning

Post-pandemic COVID-19 has influenced the current educational shift from offline to online learning (Veyvoda & Van, 2020). This situation has contributed to the practice of engaged learning in university education. It significantly contributed to the current literature on the practice of engaged learning during the pandemic where the COVID-19 pandemic has created new challenges for instructors who seek HIEPs that can be facilitated online without creating excessive burdens with technology, grading, or enforcement of honor codes (Reynolds et al., 2020). They see intensive writing as the easiest for students to adopt during the pandemic. However, students' poor writing skills become a challenge that needs intervention to address the problem (Sasa, 2020).

Even though engaged learning should benefit students and educators, the issue of core values that are connected to ethical action, such as cybercrime, needs to be addressed. Beck et al. (2021) suggested critical digital literacy modules to be taught at the university to improve engaged learning. This module can be adopted to apply engaged learning in the era of IR4.0. Hence, exploring engaged learning should continue after the epidemic phase. In fact, it should empower the new era of education 5.0 in relation to IR4.0 that has been discussed worldwide.

#### 4. CONCLUSION

This study aimed to systematize the existing body of scientific knowledge concerning the application of High Impact Educational Practices (HIEPs). This study aims to provide an

overview of the main applications of HIEPs at higher education institutions worldwide. The authors discovered that despite the effectiveness of HIEPs in literature, there is still a lack of a comprehensive overview of how HIEPs could be implemented in various ways. The authors conducted a thematic analysis to fill this gap and discovered five theme: collaborative, service, experiential, research-based, and engaged learning. For each of the themes, the types of HIEPs applications were assessed. The findings of this study demonstrate that certain themes have received more attention in the scientific literature. The findings of this study revealed several gaps in the literature on the application of HIEPs at the university and helped identify some suggested directions for future research.

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#### **AUTHORS' CONTRIBUTION**

NSMS was the main contributor to the study who created the abstract, introduction, materials and method, quantitative and qualitative findings, conclusion, and references. FMS and MASA helped in the methodology, results, discussion, and references.

#### **CONFLICT OF INTEREST**

The authors declare no conflict of interest.

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