INNOVATIVE LEARNING ENVIRONMENTS
STUDENT EXPERIENCE: THE SCOPING STUDY

ILE+SE WORKSHOP 2 ANALYSIS

02

THE UNIVERSITY OF MELBOURNE

ile+se
INNOVATIVE LEARNING ENVIRONMENTS AND STUDENT EXPERIENCE: THE SCOPING STUDY

ILE+SE Workshop 2 analysis

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The work represented in this report is the result of considerable effort by all in the ILESE project: team Leaders, team members, and our support staff. In particular the authors need to acknowledge the significant contribution of the project's full management team; Lauren Clarke for taking responsibility for the successful workshops, Ramone Bishawi for organisation, and Colin Campbell and Marian Mahat for valued advice.

Visit https://ilesescopingstudy.com.au/ to learn more about this project.

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WORKSHOP 2

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INTRODUCTION

DR JULIA MORRIS, DR CHRIS BRADBEER & ASSOCIATE PROFESSOR WESLEY IMMS

The Innovative Learning Environments and Student Experience Scoping Study (hereafter referred to as ILE+SE) is a 1.5 year exploratory study leveraged off more than a decade of findings from a suite of research by the host group, the *Learning Environments Applied Research Network* (LEaRN) and other key centres, industry R&Ds, and individual researchers around the world. That research has built a body of knowledge concerning the architectural and pedagogic design of innovative learning spaces, how to evaluate their effectiveness, and how to assist teachers to utilise those spaces for positive impact on student learning.

Results from those projects indicate the next logical step is gathering quality data around students' actual experiences in these spaces. However, this assumption requires testing; if we are to continue to build a logical, comprehensive research base that supports ILE design and effective use, the next project must have international relevance, must encompass the needs of education and allied industries, and must create data that directly informs infrastructure development and best practices in learning spaces. The first workshop gathered extensive data from ILE+SE industry, academic and education participants in 21 countries regarding the perceived gaps that exist. This report summarises the analysis from the *second* workshop for the study; a ranking by those participants of the issues most needed in future research.

Santa Sophia Catholic College. BVN Architects.

BACKGROUND & WORKSHOP 2 ANALYSIS PLAN

BACKGROUND

ILE+SE was designed as an online, cross disciplinary (the sectors of education, academe, and industries), international (representation from 21 countries) exploratory study aimed at identifying the most needed future research internationally in innovative learning environments research. It addressed three critical questions: (a) What is the current body of research being used by the three sectors? (b) What do these sectors identify as the priority gaps that require future research? (c) How should that research be designed to meet the needs of the geographies and sectors represented in the Scoping Study?

ILE+SE undertook this task as a set of three international cross-disciplinary workshops, with the first identifying the gaps, the second exploring the hierarchy of those gaps; an upcoming third workshop will address the proposed research design for future studies. A separate Delphi Study is running in parallel to the workshop activities to provide a second set of data from international experts on the same questions.

As Figure 1 indicates, the major report from the first (gap identification) workshop was published in June (www.ilesescopingstudy.com.au). This minor report provides analysis of the second (ranking) workshop. A final White Paper will combine analysis of all three

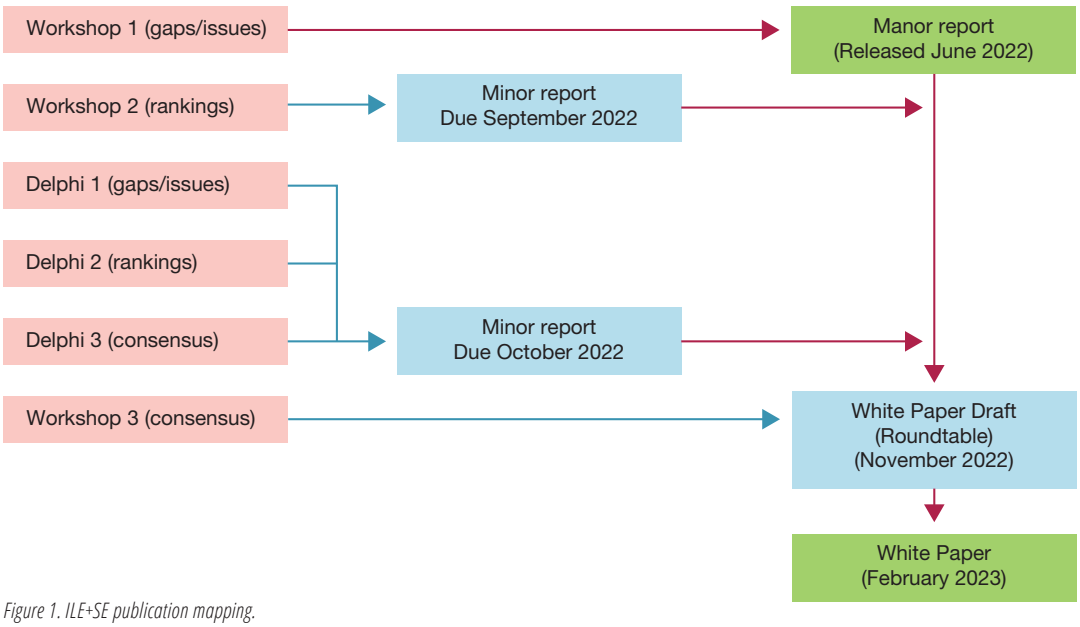

Figure 1. ILE+SE publication mapping.

workshops, the separate Delphi, and the resulting proposal for future research.

WORKSHOP 2 ANALYSIS PLAN

In terms of focus, Workshop 2 was designed to address ILE+SE's second research question (question b):

What is the critical research that now must be done?

Prioritising the gaps is an important step in determining if there is a consistent research focus across the sectors and geographies.

A total of 127 individuals participated in Workshop 2, working in 20 teams from 17 countries. While the first workshop had proportional representation across the three sectors, Workshop 2 had a higher proportion of educators (Academe 17%, Industry 36%, Educators 46%). In terms of geographical representation, 61% of participants were from Australia/SE Asia/New Zealand, 18% from the Americas, 21% from Europe and South Africa.

Workshop 2 used a Typeform survey to gather individuals' views of their five most and five least important research gaps, selected from the ILE+SE list of 20 gaps created from Workshop 1 data. Workshop 2 ranked these gaps and invited discussion about why individuals had made these selections. In that workshop, teams then reflected on the commonalities and differences within their group.

Analysis was conducted on the survey data; first, by doing a ranking from the gaps that were placed in the most important or least important gap clusters; and second, by reviewing the qualitative comments that gave reasons why a gap was listed within either cluster. Each survey response was also tagged with the individual's sector (academe, industry, education) and geographical location (country). No data were excluded from analysis.

A summary of the analysis is presented below. As some of the tables are quite large they have been placed in the Appendix, and will be referred to in-text.

Clément-Cormier School in Bouctouche, New-Brunswick, Canada.
Grade 9 Learning Lab where 130 students, seven teachers, one Resource Teacher and, two Educational Assistances are working together to assist students with their learning.

ANALYSIS OF QUESTION B
WHAT IS THE CRITICAL RESEARCH THAT NOW MUST BE DONE?

The short answer is that there is consensus about what research needs to be prioritised. We never expected to get the same top 5 ranking across sectors and geographies, but we have come close. There are multiple items that consistently rate highly. The rankings point to a need to focus on the complex overlap between student wellbeing, learning outcomes and the evaluation of ILEs. Where there is diversity, there is a logic between the differences that will continue to be explored.

Workshop 2 asked individuals to rank the list of 20 gaps developed from the workshop 1 data. It was important to explicitly rank the gaps in this workshop, as our initial analysis from workshop 1 did not:

1. Determine if the citations given to a research gap were positive or negative (i.e., the frequency of citation was increased even if the discussion was about *not* needing more research on a particular topic).
2. Constrain the options available to individuals (i.e., frequencies emerged based on who was at the table, and the diversity of participants meant each team had unique conversations rather than responding to a pre-defined list).

Consequently, the aim of workshop 2 was to develop two specific clusters from the list of 20 gaps:

1. The 5 most important priorities, and
2. The 5 least important priorities for future research.

These clusters were used to narrow the focus of the emerging research agenda, presented as the overall hierarchy of gaps. To begin exploring consensus, a sector analysis of gaps was conducted, as well as a geographies analysis.

OVERALL HIERARCHY OF GAPS (BY FREQUENCY)

The overall hierarchy of gaps presents analysis from the full 127 participants in workshop 2. As the ranking exercised asked individuals to nominate a top 5 cluster, each gap placed within the cluster was given a point. The overall points, or frequency, for each gap (shown in the total mentions row of Table 1, located in the Appendix) was then weighted, this was to ensure that each sector had an equal voice in the ranking. The weighted data were then ranked using the Equal Ranks function in Excel to generate the hierarchical list. This function sorts the list by frequency, giving equal place to the gaps that shared the same frequencies.

The 5 highest priority gaps are:

1. **Evaluation of Learning Environments:** What empirical evidence informs how these spaces operate? This needs to be finer grained than previously, to be applicable to specific contexts. *A selection from the identified sub-issues includes the impact of specific designs on teaching approaches and learning outcomes, the effect of a range of affordances on teaching and learning, social emotional and physical well-being facilitated by designs, and the impact of non-traditional spaces on teaching and learning.*
2. **Affective Learning Outcomes (21st C Learning):** This relates to a design's impact on student knowledge skills and attitudes considered necessary for immersion into a 'knowledge economy'. *A selection from the identified topics includes a design's impact on building student and teacher collaboration capacities, facilitating entrepreneurship, developing critical and creative thinking, developing interpersonal 'soft' skills, and a variety of learner capabilities or learning dispositions.*
3. **Design of ILEs:** What strategies produce tangible benefits? It relates to the physical design itself, as well as aspects of the design process. *A selection from the identified topics includes IEQ, aesthetics and ambiance, the concept of affordances, participatory design, inclusive design, alternative learning spaces, and 'design' relationships with educational and local-school systems.*
4. **Impact on Student Engagement:** What measurements can be made about the way ILE designs influence student motivation, involvement in the learning process, their interest and enthusiasm? *A selection from the identified topics includes the impact of design on students' behavioural social and emotional engagement, design 'engagement' factors that improve learning outcomes, and designs that reflect student agency and voice.*
5. **Health and Wellbeing:** Evidence is required about the role of ILEs in facilitating good mental health, and positive socio-emotional well-being. *A selection from the identified topics includes how ILEs might protect the interests of those with disabilities special needs and of disadvantage, engender student and teacher agency, provide desired private versus communal learning environments, and support the development of healthy relationships.*

Table 2 (also located in the Appendix) shows the lowest priority areas for reference, with COVID, subject/discipline specific research and informal learning environments being most cited as least important priorities for future research.

ANALYSIS ACCORDING TO SECTORS

The ranking of key issues by sector is presented in Table 3. It was evident that there are some different priorities for each sector, often two sectors ranked a gap more highly than the third; for example, student engagement was important for both education and industry, but not for academe.

Table 3. Analysis by sectors showing most important priorities, by ranking.

Academic	Education	Industry
Evaluation of learning environments (1)	Academic learning outcomes (1)	Affective learning outcomes (21st C) (1)
Design of ILE spaces (2)	Impact on student engagement (2)	Design of ILE spaces (1)
Affective learning outcomes (21st C) (3)	Inclusiveness (3)	Evaluation of learning environments (3)
Health and wellbeing (3)	Health and wellbeing (4)	Health and wellbeing (4)
Inclusiveness (5)	Evaluation of learning environments (5)	Hybrid learning environments (5)
Teaching (5)		Impact on student engagement (5)

Academe's top 5 included gaps from the overall list but also prioritised inclusiveness and teaching. They were the only sector to include teaching in their top 5 and the only sector to not include student engagement as a priority.

Education had the most representation of all sectors in the second workshop, and a much wider distribution of frequencies across individuals' top 5s than the other sectors. Education showed some differences in their priority list compared to the overall list, with academic learning outcomes and inclusiveness featuring in their sector list. They more frequently discussed the need for a study that links ILEs to academic learning outcomes to provide evidence for increased investment in ILE builds. Both inclusiveness and health and wellbeing made it into their top 5, with their reasoning showing they are interested in ensuring ILEs cater for a diverse range of students.

Industry was the only sector to prioritise hybrid learning environments. However, there was greater consistency between industry responses and the overall list, with their other 4 gaps being represented in the overall top 5 list.

Figure 2 shows the relationship between the sector analysis and the overall analysis, with the red bars showing the top 5 overall priorities, and the dots showing where each of these priorities sat within the sector hierarchy. The range, presented on the right hand side of the figure, shows greater consensus on gaps such as affective learning outcomes and health and wellbeing across the sectors, and greater differences between how the sectors ranked issues such as student engagement.

The full analysis for sectors is shown in Table 4 and Table 5 (located in the Appendix), which provide the five most and five least important priorities, respectively.

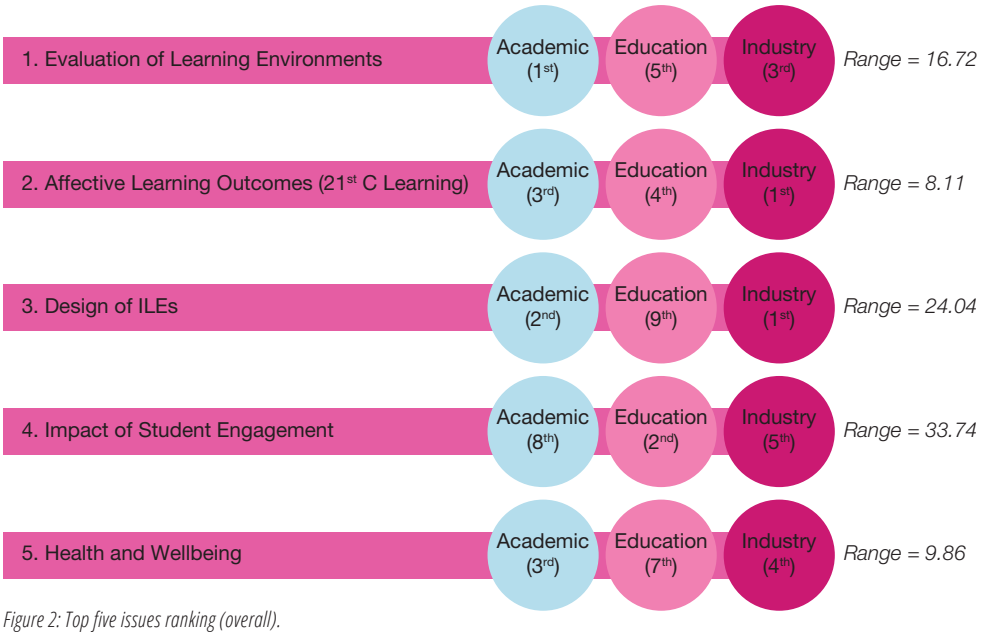

Figure 2: Top five issues ranking (overall).

ANALYSIS ACCORDING TO GEOGRAPHIES

Workshop 2 included 20 teams with representatives across 17 countries. A small number of Teams have members who come from a different region to the majority of that Team. The schedule of countries identified in the workshop 1 analysis was also applied to the workshop 2 data (see Table 6), with the table being updated to show workshop 2 participation.

Table 6. Schedule of countries for geographies analysis.

Country code used for analysis	Country/countries included	Teams represented
Africa	South Africa	Mzanzi South Africa
Australia	Australia	LEA Australasia, Queensland Education, CEO Parramatta, Beparta Furniture and Associates, Anon, DoE WA
Brazil	Brazil	Team Brazil
Canada	Canada	Team Canada
Europe +	England	A4LE Europe Action Research Team
New Zealand	New Zealand	Grow Waitaha, EBOSS and Partners
Nordic	Denmark, Finland, Iceland, Norway, Sweden	Nordic Association
Scotland	Scotland	Scottish Alliance
Southeast Asia	Singapore, China, Hong Kong	Singapore American School, China Regional Team, Steelcase APAC
USA	USA	Steelcase USA, DLR Group

Countries were grouped according to how Teams have self-identified during the project in terms of the voice they represent.

Figure 3 shows the top 5 ranking of research gaps by geographies. It shows a high degree of consistency with the sector analysis. The 4 main priorities: affective learning outcomes, design of ILE spaces, evaluation of learning environments and impact on student engagement, are four of the top 5 overall priorities. Health and wellbeing, the gap that rounds out the sector analysis, was a priority for 6 of the 10 regions in the scoping study.

Table 7 expands on the figure above, showing the frequency of gaps as identified within each country's top 5 most important priorities lists. In addition to those listed above, there were another eight gaps that a smaller group (one or more regions) felt were important to their context. This indicates there may be smaller projects required to address areas of need for certain countries in addition to a larger project that focuses on the issues with broader consensus.

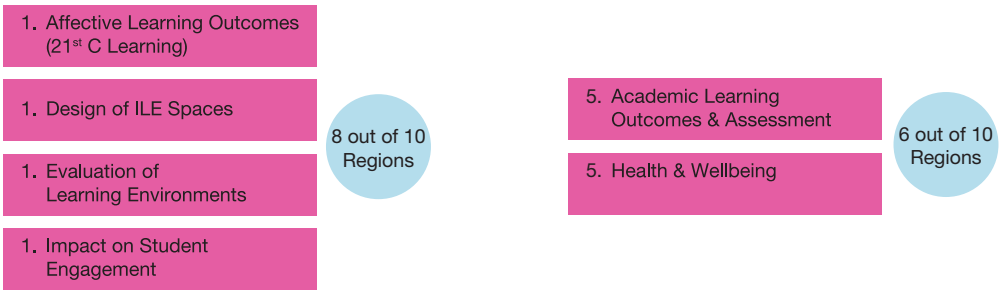

Figure 3. Top five rankings (by geographies).

Table 7. Hierarchy of most important gaps by geographies

Gap	Ranked in five most important (out of 10 countries)	Which countries?
Affective learning outcomes (21st C learning)	8	All except Europe + and New Zealand
Design of ILE spaces	8	All except Africa and Brazil
Evaluation of learning environments	8	All except New Zealand and USA
Impact on student engagement	8	All except Scotland and USA
Academic learning outcomes and assessment	6	All except Africa, Brazil, Scotland and SE Asia
Health and wellbeing	6	All except Australia, Brazil, Canada and SE Asia
Inclusiveness	5	Africa, Canada, Europe, Scotland and USA
Hybrid learning models	3	Africa, Brazil and Nordics
Student agency/voice	3	Australia, Scotland and SE Asia
Teaching	3	Canada, New Zealand and Nordics
School – local level issues	2	Africa and Nordics
Child development theory and environment	1	Africa
Indoor/outdoor	1	Africa
Sustainability	1	Nordics

This analysis shows fewer priorities across regions; 6 gaps were not listed within the top 5 ranking across any geography. These were:

1. COVID,
2. Informal learning environments,
3. Physical behaviour and safety,
4. School systems,
5. Subject/discipline specific research, and
6. Technology.

Table 8 and Table 9 (located in the Appendix) show the most and least important priorities for each geography. The first row shows times mentioned (count of citations), the second row shows the count as a percentage for the country code, and the third row shows its rank in either the five most or five least important priorities.

SUMMARY

The analysis team make the following observations in terms of the ranking of perceived gaps:

- There was noteworthy consistency of rankings across the 'top five' issues in both the sector and geographies analyses. Similarly, the 'bottom five' issues were equally consistent.
- In terms of the sector analysis, this was not to say there was total consistency – occasionally two sectors ranged priorities higher than the third, indicated in Figure 2 by the individual rankings in the circles and the extent of that difference indicated by the 'range' scores.
- Six of the 20 research gap issues identified in Workshop 1 were not cited by any geographical regions, significantly narrowing the priorities for future research.
- The final sector and geographies rankings suggest future research should have a twin focus: (1) measuring effect (evaluation and design impact), and (2) understanding affect - the complex phenomenon of student lived experience in ILEs (student engagement, health and wellbeing, and affective learning outcomes gaps).
- Divergences to the pattern described above suggest the need for subtle but focused versions of any future research; for example, a small number of regions highlighted issues contrary to the majority, and in terms of the sectors, when differences in priorities occurred, it was Education that more often needed a different focus with increased interest in academic learning outcomes and inclusiveness.

APPENDIX

Table 1. Overall most important priorities.

Highest priorities	21st C learning (Affective learning outcomes)	Academic learning outcomes & assess-ment	Child-development theory & environment	COVID	Design of ILE spaces	Evaluation of learning environ-ments	Health & wellbeing	Hybrid learning models	Impact on student engage-ment	Inclusiveness	Indoor/ outdoor	Informal learning environ-ments	Physical behaviour and safety	School - local level issues	School systems	Student agency/ voice	Subject/ discipline specific research	Sustainability	Teaching	Technology
Total mentions (unweighted)	60	52	19	8	54	61	51	33	61	47	19	12	10	15	17	40	12	14	39	11
Total % (weighted)	47%	36%	13%	7%	46%	50%	42%	25%	43%	37%	16%	9%	9%	13%	14%	31%	9%	12%	32%	9%
Total Rank (weighted)	**2**	7	14	20	**3**	**1**	**5**	10	**4**	6	11	18	17	13	12	9	16	15	8	19

Table 2. Overall least important priorities.

Lowest priority	21st C learning (Affective learning outcomes)	Academic learning outcomes & assess-ment	Child-develoment theory & environment	COVID	Design of ILE spaces	Evaluation of learning environ-ments	Health and wellbeing	Hybrid learning models	Impact on student engage-ment	Inclusiveness	Indoor/ outdoor	Informal learning environ-ments	Physical behaviour and safety	School - local level issues	School systems	Student agency/ voice	Subject/ discipline specific research	Sustainability	Teaching	Technology
Total mentions (unweighted)	7	20	22	101	8	11	10	39	9	13	46	51	34	51	51	16	54	36	12	43
Total % (weight-ed)	5.22%	19.07%	19.25%	76.11%	5.00%	7.01%	7.24%	34.71%	9.36%	9.09%	34.24%	39.92%	26.83%	37.87%	38.19%	12.53%	43.99%	28.28%	9.48%	35.87%
Total Rank (weighted)	19	12	11	**1**	20	18	17	7	15	16	8	**3**	10	**5**	**4**	13	**2**	9	14	6

Table 4. Most important priorities by sector.

Highest priorities	21st C learning (Affective learning outcomes)	Academic learning outcomes & assess-ment	Child-development theory & environment	COVID	Design of ILE spaces	Evaluation of learning environ-ments	Health & wellbeing	Hybrid learning models	Impact on student engage-ment	Inclusiveness	Indoor/ outdoor	Informal learning environ-ments	Physical behaviour and safety	School - local level issues	School systems	Student agency/ voice	Subject/ discipline specific research	Sustainability	Teaching	Technology
Academic mentions	10	5	1	2	12	13	10	4	6	9	4	1	3	4	3	7	2	3	9	2
Academic %	45%	23%	5%	9%	55%	59%	45%	18%	27%	41%	18%	5%	14%	18%	14%	32%	9%	14%	41%	9%
Academic Rank	3	9	19	16	2	1	3	10	8	5	10	19	13	10	13	7	16	13	5	16
Industry Mentions	24	10	8	4	24	23	20	19	19	11	7	7	4	6	7	13	5	8	7	4
Industry %	52%	22%	17%	9%	52%	50%	43%	41%	41%	24%	15%	15%	9%	13%	15%	28%	11%	17%	15%	9%
Industry Rank	1	9	10	18	1	3	4	5	5	8	12	12	18	16	12	7	17	10	12	18
Education mentions	26	37	10	2	18	25	21	10	36	27	8	4	3	5	7	20	5	3	23	5
Education %	44%	63%	17%	3%	31%	42%	36%	17%	61%	46%	14%	7%	5%	8%	12%	34%	8%	5%	39%	8%
Education Rank	4	1	10	20	9	5	7	10	2	3	12	17	18	14	13	8	14	18	6	14

Table 5. Least important priorities by sector, number of mentions and resulting weighted average.

Lowest priority	21st C learning (Affective learning outcomes)	Academic learning outcomes & assess-ment	Child-development theory & environment	COVID	Design of ILE spaces	Evaluation of learning environ-ments	Health and wellbeing	Hybrid learning models	Impact on student engage-ment	Inclusiveness	Indoor/ outdoor	Informal learning environ-ments	Physical behaviour and safety	School - local level issues	School systems	Student agency/ voice	Subject/ discipline specific research	Sustainability	Teaching	Technology
Academic mentions	1	7	6	14	0	0	1	12	4	1	6	9	6	6	6	3	11	5	2	10
Academic %	5%	32%	27%	64%	0%	0%	5%	55%	18%	5%	27%	41%	27%	27%	27%	14%	50%	23%	9%	45%
Academic Rank	16	6	7	1	19	19	16	2	13	16	7	5	7	7	7	14	3	12	15	4
Industry Mentions	2	7	7	36	3	5	4	8	3	5	16	16	12	21	23	4	19	20	5	13
Industry %	4%	15%	15%	78%	7%	11%	9%	17%	7%	11%	35%	35%	26%	46%	50%	9%	41%	43%	11%	28%
Industry Rank	20	11	11	1	18	13	16	10	18	13	6	6	9	3	2	16	5	4	13	8
Education mentions	4	6	9	51	5	6	5	19	2	7	24	26	16	24	22	9	24	11	5	20
Education %	7%	10%	15%	86%	8%	10%	8%	32%	3%	12%	41%	44%	27%	41%	37%	15%	41%	19%	8%	34%
Education Rank	19	14	11	1	16	14	16	8	20	13	3	2	9	3	6	11	3	10	16	7

Table 8. Most important priorities by geographies.

Highest priorities by Country code	21st C learning (Affective learning outcomes)	Academic learning outcomes & assess-ment	Child-development theory & environment	COVID	Design of ILE spaces	Evaluation of learning environ-ments	Health & wellbeing	Hybrid learning models	Impact on student engage-ment	Inclusiveness	Indoor/ outdoor	Informal learning environ-ments	Physical behaviour and safety	School - local level issues	School systems	Student agency/ voice	Subject/ discipline specific research	Sustainability	Teaching	Technology
Africa	3	1	2	1	2	2	2	3	2	3	2	1	1	2	1	1	0	0	1	0
Africa %	50%	17%	33%	17%	33%	33%	33%	50%	33%	50%	33%	17%	17%	33%	17%	17%	0%	0%	17%	0%
Africa Rank	1	11	4	11	4	4	4	1	4	1	4	11	11	4	11	11	18	18	11	18
Australia	21	24	8	3	16	23	20	13	27	18	9	4	2	4	11	22	6	5	15	4
Australia %	41%	47%	16%	6%	31%	45%	39%	25%	53%	35%	18%	8%	4%	8%	22%	43%	12%	10%	29%	8%
Australia Rank	5	2	13	19	8	3	6	10	1	7	12	16	20	16	11	4	14	15	9	16
Brazil	3	2	0	0	3	3	2	3	4	0	0	0	0	2	0	0	0	0	1	2
Brazil %	60%	40%	0%	0%	60%	60%	40%	60%	80%	0%	0%	0%	0%	40%	0%	0%	0%	0%	20%	40%
Brazil Rank	2	6	11	11	2	2	6	2	1	11	11	11	11	6	11	11	11	11	10	6
Canada	5	5	1	0	3	4	2	2	3	3	1	0	0	0	2	2	2	1	3	1
Canada %	63%	63%	13%	0%	38%	50%	25%	25%	38%	38%	13%	0%	0%	0%	25%	25%	25%	13%	38%	13%
Canada Rank	1	1	13	17	4	3	8	8	4	4	13	17	17	17	8	8	8	13	4	13
Europe	1	2	1	0	0	2	2	0	2	2	0	0	1	0	1	0	0	0	1	0
Europe %	33%	67%	33%	0%	0%	67%	67%	0%	67%	67%	0%	0%	33%	0%	33%	0%	0%	0%	33%	0%
Europe Rank	6	1	6	11	11	1	1	11	1	1	11	11	6	11	6	11	11	11	6	11
New Zealand	4	5	2	2	7	3	6	2	7	4	2	1	2	3	0	2	0	2	6	0
NZ %	33%	42%	17%	17%	58%	25%	50%	17%	58%	33%	17%	8%	17%	25%	0%	17%	0%	17%	50%	0%
NZ Rank	6	5	10	10	1	8	3	10	1	6	10	17	10	8	18	10	18	10	3	18
Nordic	2	2	1	0	4	6	2	2	2	1	1	0	1	3	1	1	1	2	3	0
Nordic %	29%	29%	14%	0%	57%	86%	29%	29%	29%	14%	14%	0%	14%	43%	14%	14%	14%	29%	43%	0%
Nordic Rank	5	5	11	18	2	1	5	5	5	11	11	18	11	3	11	11	11	5	3	18
SE Asia	9	5	2	1	8	6	5	4	9	1	0	2	1	1	0	6	2	3	4	1
SE Asia %	64%	36%	14%	7%	57%	43%	36%	29%	64%	7%	0%	14%	7%	7%	0%	43%	14%	21%	29%	7%
SE Asia Rank	1	6	11	14	3	4	6	8	1	14	19	11	14	14	19	4	11	10	8	14
Scotland	5	1	2	1	7	9	5	1	2	7	3	2	0	0	0	5	1	1	2	1
Scotland %	45%	9%	18%	9%	64%	82%	45%	9%	18%	64%	27%	18%	0%	0%	0%	45%	9%	9%	18%	9%
Scotland Rank	4	12	8	12	2	1	4	12	8	2	7	8	18	18	18	4	12	12	8	12
USA	7	5	0	0	4	3	5	3	3	8	1	2	2	0	1	1	0	0	3	2
USA %	70%	50%	0%	0%	40%	30%	50%	30%	30%	80%	10%	20%	20%	0%	10%	10%	0%	0%	30%	20%
USA Rank	2	3	16	16	5	6	3	6	6	1	13	10	10	16	13	13	16	16	6	10

Table 9. Least important priorities by geographies

Lowest priorities by Country code	21st C learning (Affective learning outcomes)	Academic learning outcomes & assessment	Child-development theory & environment	COVID	Design of ILE spaces	Evaluation of learning environments	Health & wellbeing	Hybrid learning models	Impact on student engagement	Inclusiveness	Indoor/ outdoor	Informal learning environments	Physical behaviour and safety	School - local level issues	School systems	Student agency/ voice	Subject/ discipline specific research	Sustainability	Teaching	Technology
Africa	1	2	0	4	0	1	0	2	0	1	1	2	1	2	3	1	3	1	1	4
Africa %	17%	33%	0%	67%	0%	17%	0%	33%	0%	17%	17%	33%	17%	33%	50%	17%	50%	17%	17%	67%
Africa Rank	9	5	17	1	17	9	17	5	17	9	9	5	9	5	3	9	3	9	9	1
Australia	2	6	6	40	3	6	6	18	3	5	18	23	19	20	20	6	16	17	4	17
Australia %	4%	12%	12%	78%	6%	12%	12%	35%	6%	10%	35%	45%	37%	39%	39%	12%	31%	33%	8%	33%
Australia Rank	20	11	11	1	18	11	11	6	18	16	6	2	5	3	3	11	10	8	17	8
Brazil	0	2	3	4	0	1	0	1	0	2	1	1	2	1	2	1	2	2	0	0
Brazil %	0%	40%	60%	80%	0%	20%	0%	20%	0%	40%	20%	20%	40%	20%	40%	20%	40%	40%	0%	0%
Brazil Rank	15	3	2	1	15	9	15	9	15	3	9	9	3	9	3	9	3	3	15	15
Canada	1	0	1	7	2	0	0	3	2	2	4	4	1	3	1	1	2	4	1	1
Canada %	13%	0%	13%	88%	25%	0%	0%	38%	25%	25%	50%	50%	13%	38%	13%	13%	25%	50%	13%	13%
Canada Rank	11	18	11	1	7	18	18	5	7	7	2	2	11	5	11	11	7	2	11	11
Europe	0	0	0	3	1	0	0	1	0	0	1	2	0	1	1	0	1	2	0	2
Europe %	0%	0%	0%	100%	33%	0%	0%	33%	0%	0%	33%	67%	0%	33%	33%	0%	33%	67%	0%	67%
Europe Rank	11	11	11	1	5	11	11	5	11	11	5	2	11	5	5	11	5	2	11	2
New Zealand	2	2	3	8	2	1	0	4	0	1	5	4	1	4	3	4	7	3	0	5
NZ %	17%	17%	25%	67%	17%	8%	0%	33%	0%	8%	42%	33%	8%	33%	25%	33%	58%	25%	0%	42%
NZ Rank	12	12	9	1	12	15	18	5	18	15	3	5	15	5	9	5	2	9	18	3
Nordic	0	2	3	5	0	0	1	2	2	0	3	2	0	2	4	1	4	0	1	3
Nordic %	0%	29%	43%	71%	0%	0%	14%	29%	29%	0%	43%	29%	0%	29%	57%	14%	57%	0%	14%	43%
Nordic Rank	15	7	4	1	15	15	12	7	7	15	4	7	15	7	2	12	2	15	12	4
SE Asia	0	3	2	12	0	1	0	2	0	1	9	6	3	9	6	0	7	2	2	5
SE Asia %	0%	21%	14%	86%	0%	7%	0%	14%	0%	7%	64%	43%	21%	64%	43%	0%	50%	14%	14%	36%
SE Asia Rank	16	8	10	1	16	14	16	10	16	14	2	5	8	2	5	16	4	10	10	7
Scotland	1	1	2	8	0	0	1	4	1	1	1	3	2	5	8	2	5	3	3	4
Scotland %	9%	9%	18%	73%	0%	0%	9%	36%	9%	9%	9%	27%	18%	45%	73%	18%	45%	27%	27%	36%
Scotland Rank	13	13	10	1	19	19	13	5	13	13	13	7	10	3	1	10	3	7	7	5
USA	0	2	2	10	0	1	2	2	1	0	3	4	5	4	3	0	7	2	0	2
USA %	0%	20%	20%	100%	0%	10%	20%	20%	10%	0%	30%	40%	50%	40%	30%	0%	70%	20%	0%	20%
USA Rank	16	8	8	1	16	14	8	8	14	16	6	4	3	4	6	16	2	8	16	8