HCI Education Survey (Aug/2012)

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Survey Structure

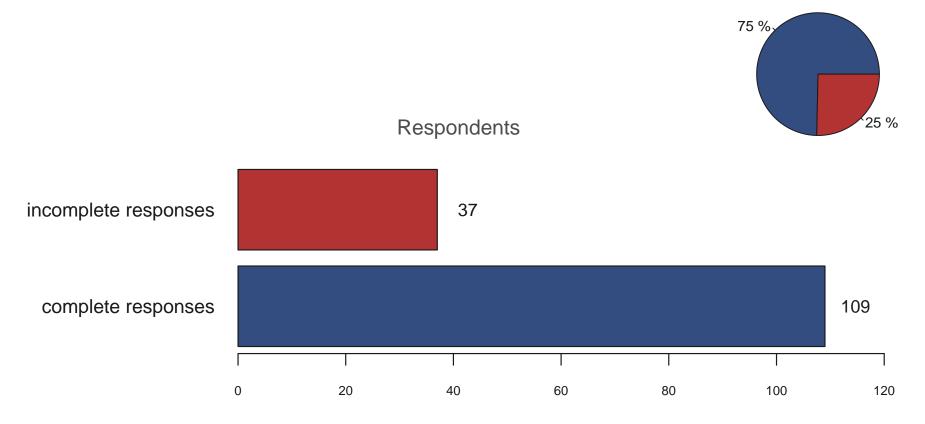
- 1. disciplines related to HCI
- 2. topics and application areas traditional and emerging
- 3. design research methods and empirical research methods
- 4. challenges to HCI education
- 5. HCI books, conferences, and journals
- 6. demographic data

Caveats

- "lost in translation"
 - Survey questions were translated from English to Portuguese, and survey answers were translated back to English.
- cultural differences
 - Disciplines have different traditions in Brazil and in the US.
 For many of them, we adopt a more European stance. For others, we have distinct Brazilian flavors.
- Some participants remarked that questions seemed inadequate, ambiguous or decontextualized.

Demographics

Respondents



IHC-L (HCI mailing list with 700 members, hosted by the Brazilian Computer Society – SBC)

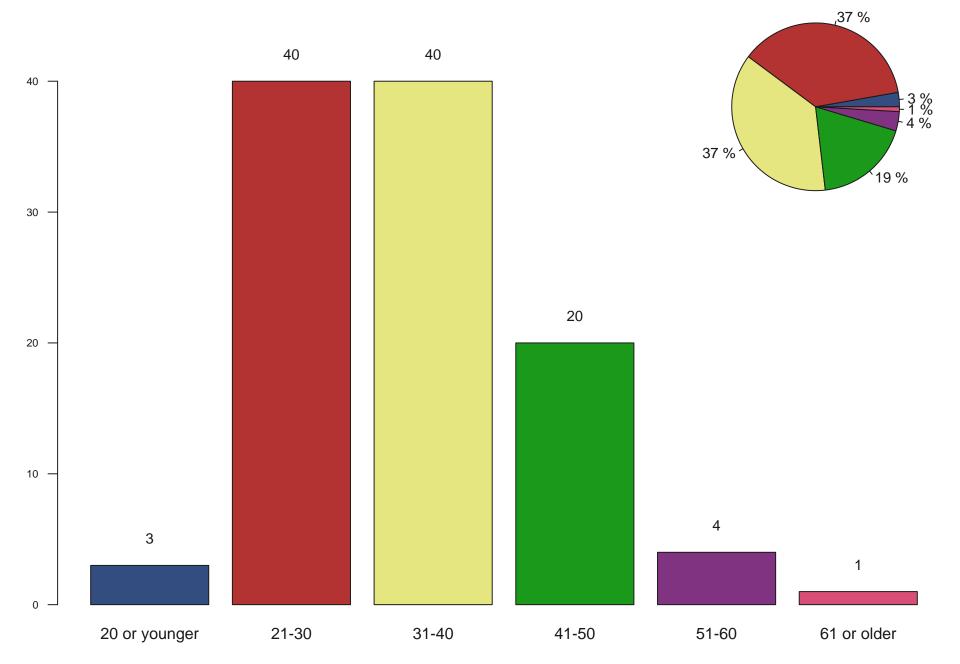
google group: desinterac

private google group from Design professor at PUC-Rio (with 250+ participants) SBC-L (general CS mailing list)

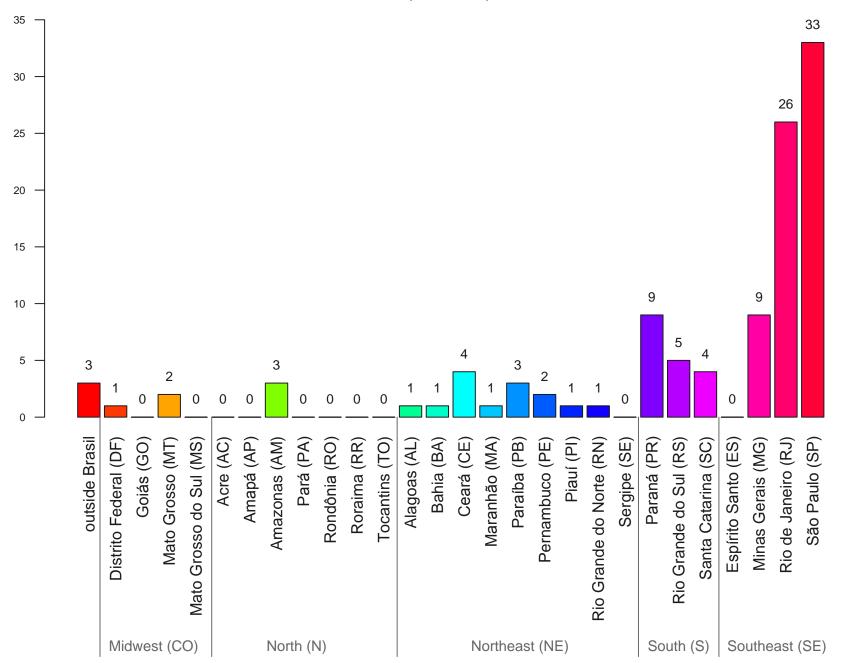
social network and Twitter connections

Respondents' Ages

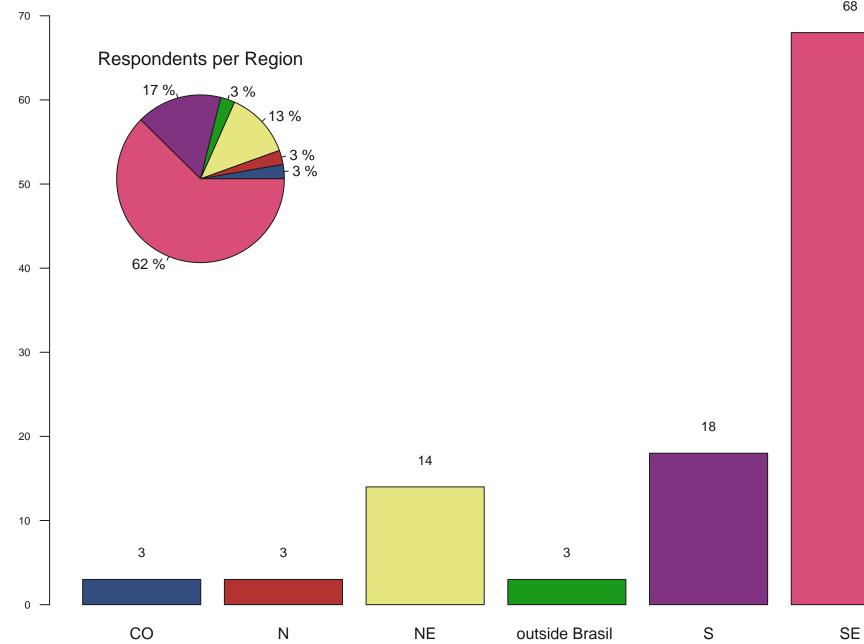
Age



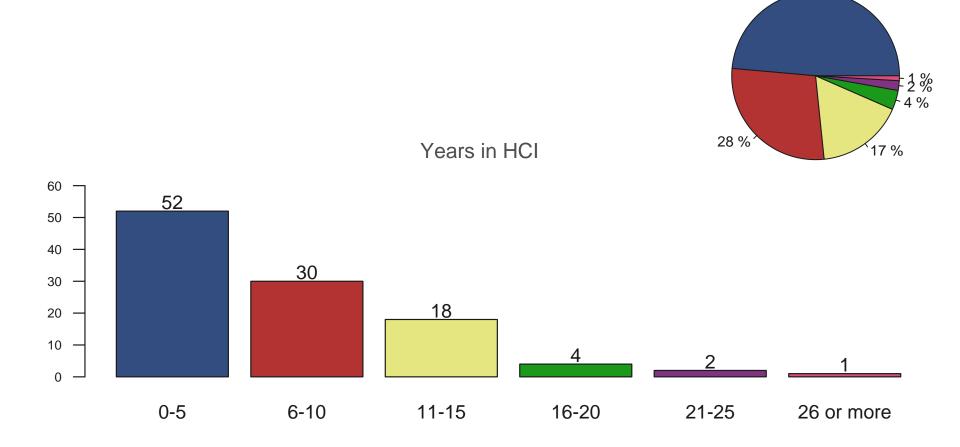
Respondents per State



Respondents per Region

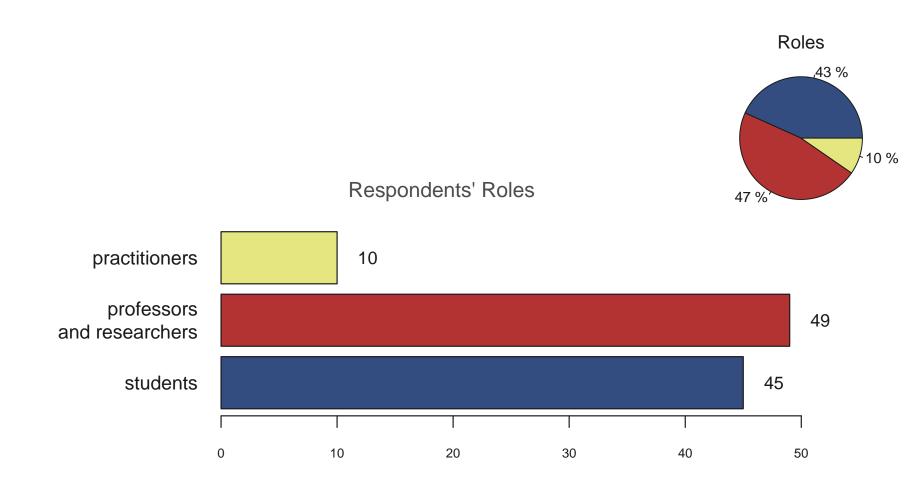


68



Years in HCI

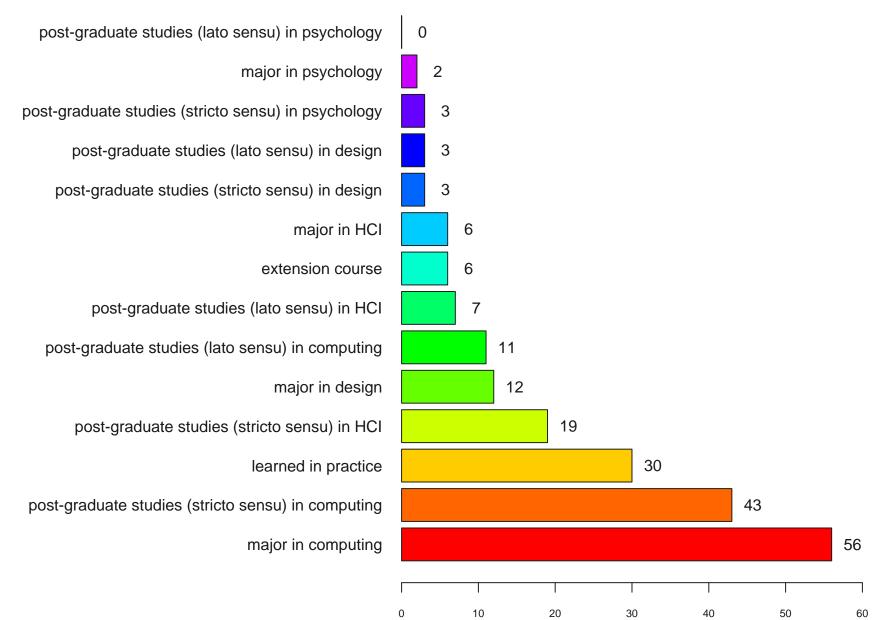
49 %



respondents were grouped by (more than one option could be selected)

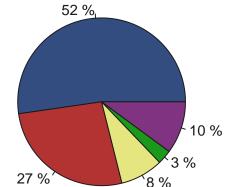
students: Stud
professors and researchers: {Prof,Res} - Stud
practitioners: {Prac} - {Prof,Res,Stud}

Background Education (ordered by count)



@simonedjb #WEIHC2012

Background Education



Background Education (grouped) 8% Other 11 Psychology 3 Design 9 HCI 29 Computing 57 0 10 20 30 40 50 60

respondents were grouped in the following order

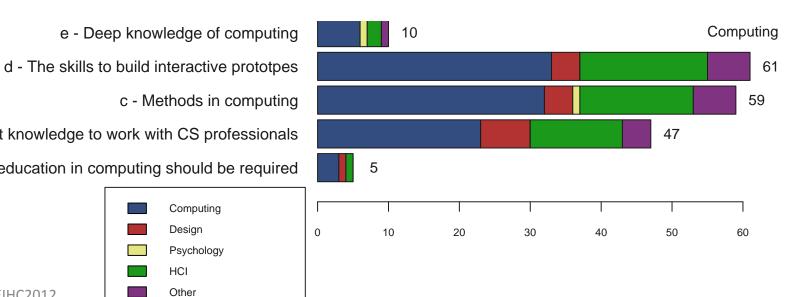
(more than one option could be selected)

HCI. CS, Des, Psy, Other

Knowledge of

Computing Design Psychology

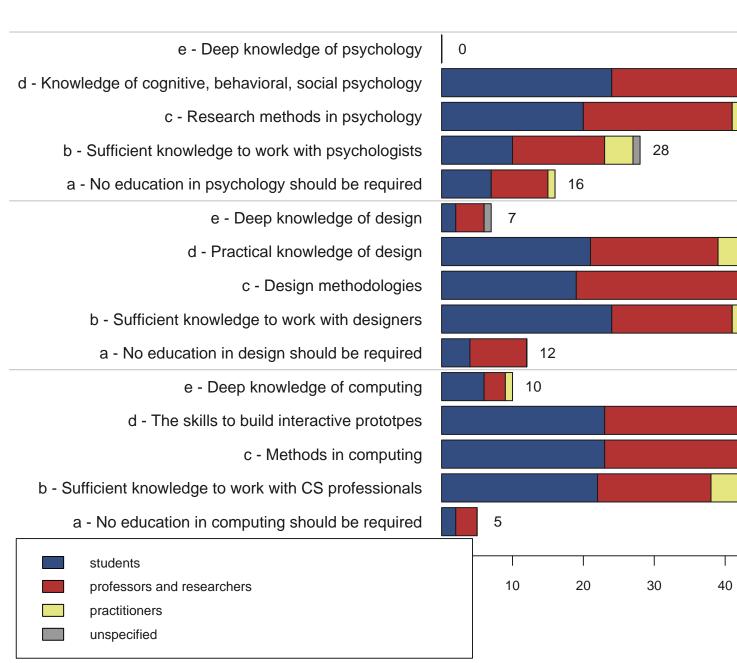
Knowledge of ...



b - Sufficient knowledge to work with CS professionals

a - No education in computing should be required

Knowledge of ...



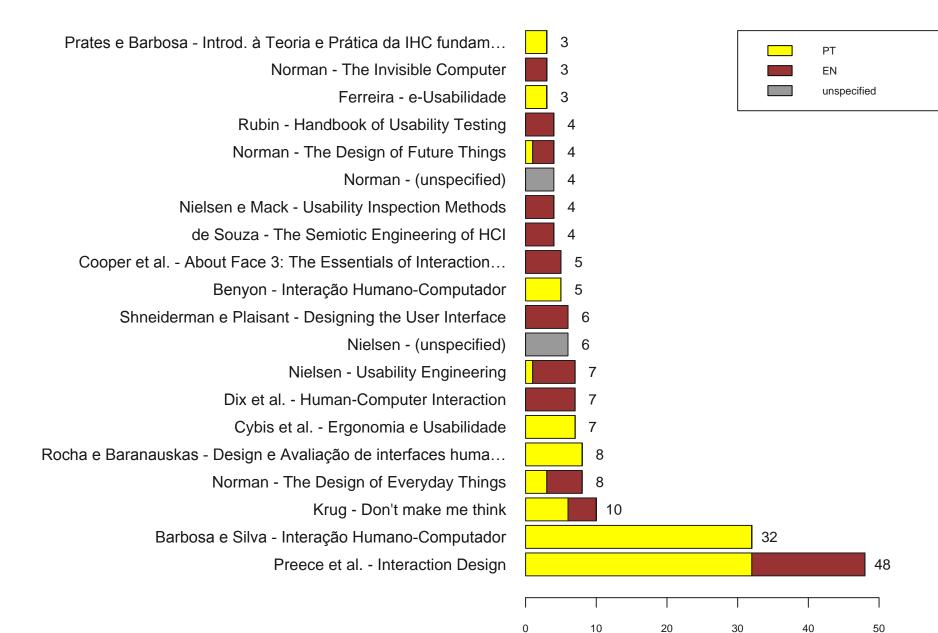
Psychology

Design

Computing

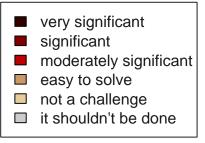
Recommended books

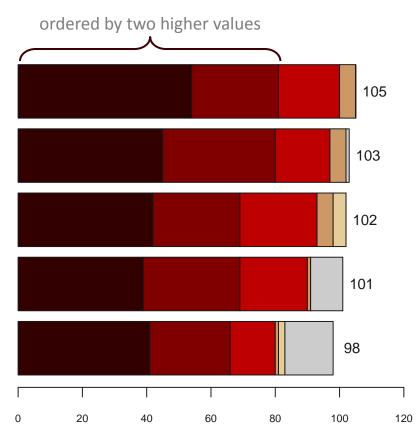
Recommended books (3+ mentions)



Challenges to the Integration of HCI Education and Practice

Challenges Integrating HCI Education and Practice (All)





advocating the importance of HCI to computer scientists

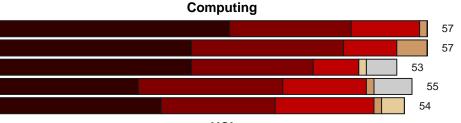
advocating the importance of HCI to the general public

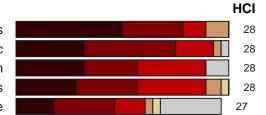
applying practical activities + conceptual approaches

adopting a common curriculum

forming a unified theoretical perspective

Challenges Integrating HCI Education and Practice per Background









3

3

3

3

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10

10

20

8

8

10

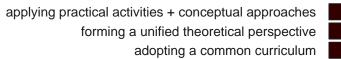
9

advocating the importance of HCI to computer scientists advocating the importance of HCI to the general public forming a unified theoretical perspective adopting a common curriculum applying practical activities + conceptual approaches

advocating the importance of HCI to computer scientists advocating the importance of HCI to the general public adopting a common curriculum applying practical activities + conceptual approaches forming a unified theoretical perspective



advocating the importance of HCI to the general public forming a unified theoretical perspective applying practical activities + conceptual approaches advocating the importance of HCI to computer scientists



advocating the importance of HCI to the general public advocating the importance of HCI to computer scientists

applying practical activities + conceptual approaches advocating the importance of HCI to computer scientists adopting a common curriculum

advocating the importance of HCI to the general public forming a unified theoretical perspective

Psychology

Other



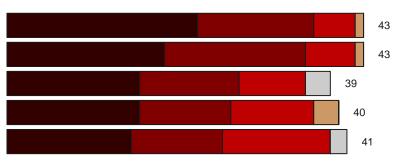
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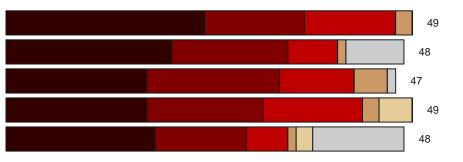
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advocating the importance of HCI to computer scientists advocating the importance of HCI to the general public forming a unified theoretical perspective applying practical activities + conceptual approaches adopting a common curriculum

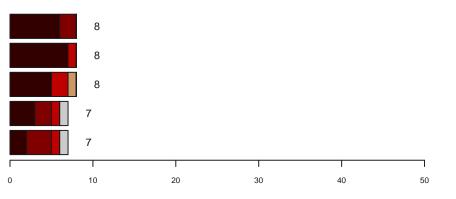


Students



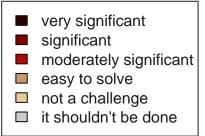
Practitioners

advocating the importance of HCI to computer scientists adopting a common curriculum advocating the importance of HCI to the general public applying practical activities + conceptual approaches forming a unified theoretical perspective

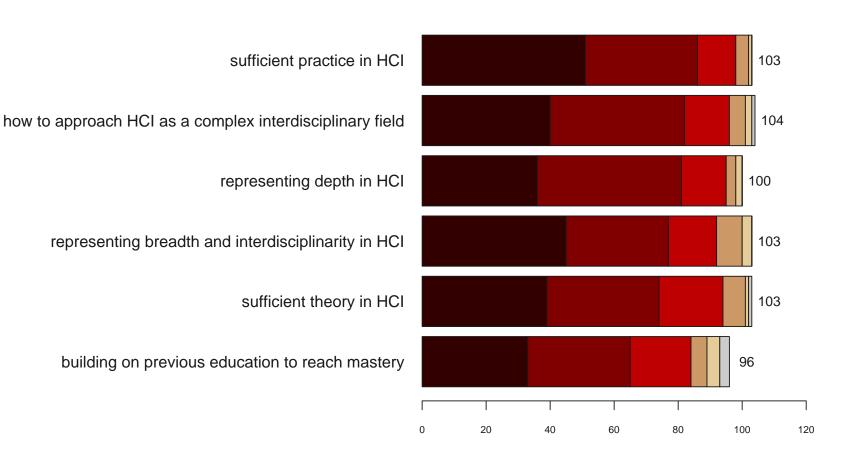


advocating the importance of HCI to the general public applying practical activities + conceptual approaches advocating the importance of HCI to computer scientists forming a unified theoretical perspective adopting a common curriculum

Challenges to HCI Education as an Interdisciplinary Area



Challenges to HCI Education as an Interdisciplinary Area (All)

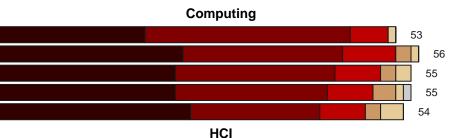


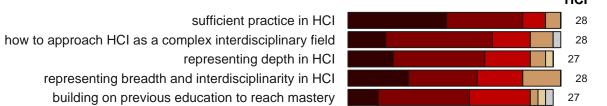
Challenges to HCI Education as an Interdisciplinary Area per Background - Top 5

representing depth in HCI

sufficient practice in HCI

sufficient theory in HCI





Design

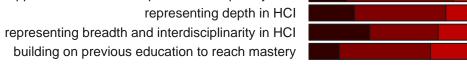
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Psychology



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40





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sufficient practice in HCI

sufficient theory in HCI

sufficient practice in HCI

representing depth in HCI

- representing breadth and interdisciplinarity in HCI
- how to approach HCI as a complex interdisciplinary field

how to approach HCI as a complex interdisciplinary field

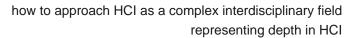
representing breadth and interdisciplinarity in HCI

building on previous education to reach mastery

how to approach HCI as a complex interdisciplinary field

representing breadth and interdisciplinarity in HCI

building on previous education to reach mastery

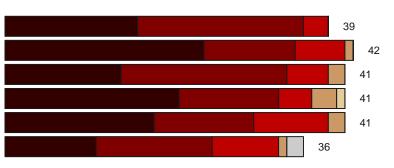


- representing breadth and interdisciplinarity in HCI
 - sufficient theory in HCI
 - sufficient practice in HCI



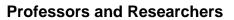
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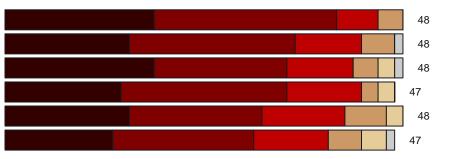
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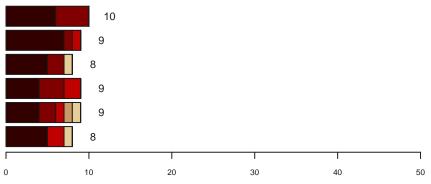
Students

representing depth in HCI sufficient practice in HCI how to approach HCI as a complex interdisciplinary field representing breadth and interdisciplinarity in HCI sufficient theory in HCI building on previous education to reach mastery





sufficient practice in HCI sufficient theory in HCI how to approach HCI as a complex interdisciplinary field representing depth in HCI representing breadth and interdisciplinarity in HCI building on previous education to reach mastery



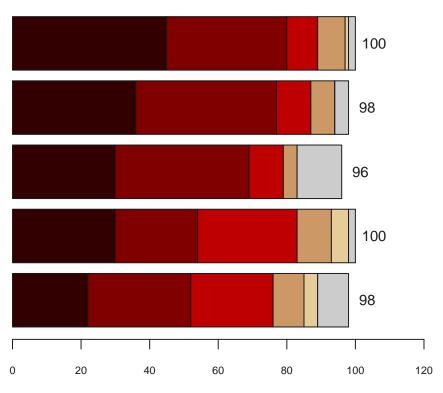
Practitioners

- how to approach HCI as a complex interdisciplinary field representing breadth and interdisciplinarity in HCI sufficient practice in HCI representing depth in HCI sufficient theory in HCI
 - building on previous education to reach mastery

Challenges to HCI Education with a Range of Perspectives and Goals

very significant
 significant
 moderately significant
 easy to solve
 not a challenge
 it shouldn't be done





teaching students with a range of perspectives and goals

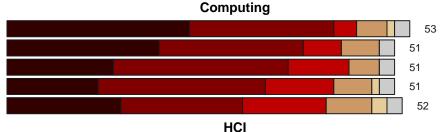
supporting a flexible curriculum

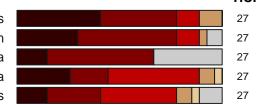
supporting different or parallel curricula

including a common introductory course in HCI curricula

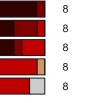
offering similar courses targeting different audiences

Challenges to HCI Education with a Range of Perspectives and Goals per Background









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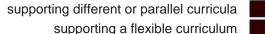
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teaching students with a range of perspectives and goals supporting a flexible curriculum supporting different or parallel curricula offering similar courses targeting different audiences including a common introductory course in HCI curricula

teaching students with a range of perspectives and goals supporting a flexible curriculum supporting different or parallel curricula including a common introductory course in HCI curricula offering similar courses targeting different audiences

> supporting different or parallel curricula supporting a flexible curriculum

teaching students with a range of perspectives and goals including a common introductory course in HCI curricula offering similar courses targeting different audiences



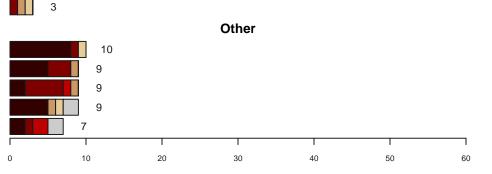
teaching students with a range of perspectives and goals offering similar courses targeting different audiences

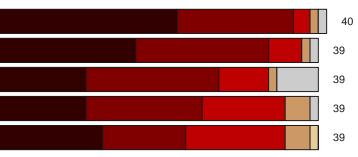
including a common introductory course in HCI curricula

including a common introductory course in HCI curricula teaching students with a range of perspectives and goals supporting a flexible curriculum offering similar courses targeting different audiences

supporting different or parallel curricula



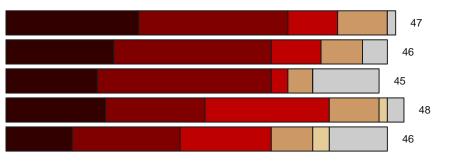




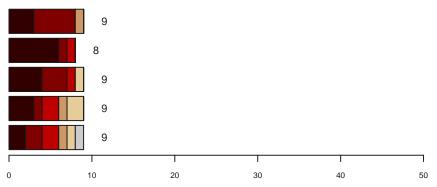
Students

teaching students with a range of perspectives and goals supporting a flexible curriculum supporting different or parallel curricula offering similar courses targeting different audiences including a common introductory course in HCI curricula





teaching students with a range of perspectives and goals supporting a flexible curriculum supporting different or parallel curricula including a common introductory course in HCI curricula offering similar courses targeting different audiences

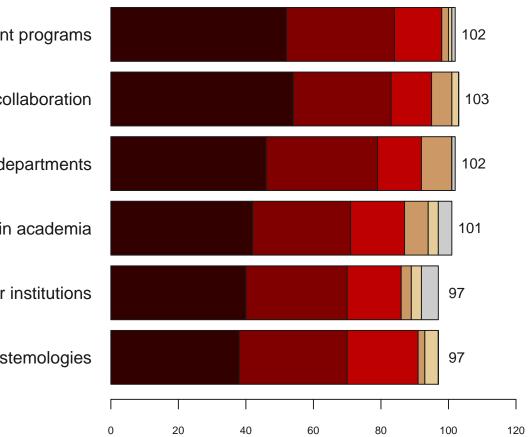


Practitioners

supporting a flexible curriculum supporting different or parallel curricula teaching students with a range of perspectives and goals including a common introductory course in HCI curricula offering similar courses targeting different audiences

Challenges to HCI Education in Academia





fostering collaboration between different programs

encouraging interdisciplinary collaboration

advocating the importance of HCI in different departments

situating HCI within academia

finding a home for HCI in smaller institutions

respecting different epistemologies

Challenges to HCI Education in Academia per Background - Top 5

encouraging interdisciplinary collaboration

encouraging interdisciplinary collaboration

finding a home for HCI in smaller institutions

situating HCI within academia

situating HCI within academia

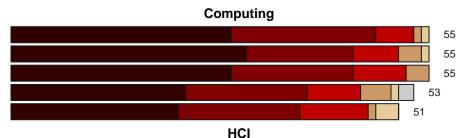
respecting different epistemologies

respecting different epistemologies

fostering collaboration between different programs

fostering collaboration between different programs

advocating the importance of HCI in different departments

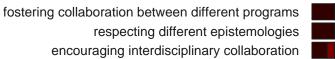




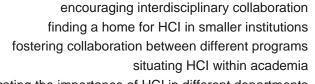
Design



advocating the importance of HCI in different departments encouraging interdisciplinary collaboration fostering collaboration between different programs finding a home for HCI in smaller institutions respecting different epistemologies



advocating the importance of HCI in different departments situating HCI within academia



advocating the importance of HCI in different departments



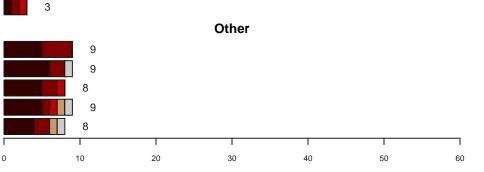
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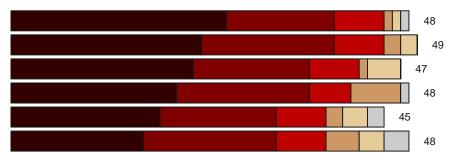




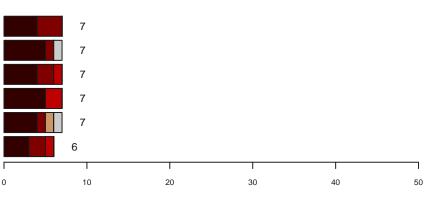
fostering collaboration between different programs encouraging interdisciplinary collaboration advocating the importance of HCI in different departments situating HCI within academia finding a home for HCI in smaller institutions respecting different epistemologies



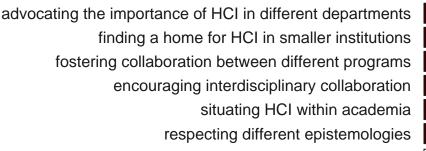
Students



fostering collaboration between different programs encouraging interdisciplinary collaboration respecting different epistemologies advocating the importance of HCI in different departments finding a home for HCI in smaller institutions situating HCI within academia

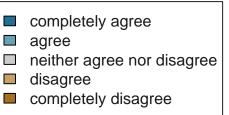


Practitioners



Relationship between HCI in academia and in industry

Relationship between HCI in academia and HCI in industry (All)

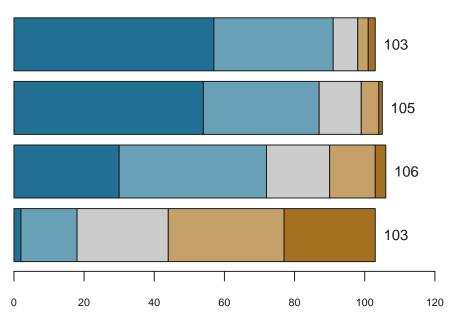


There are divides academia x industry.

Not enough research shared academia-industry.

HCI education prepares students more to academia.

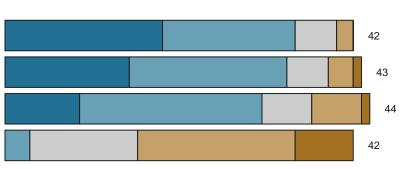
HCI education prepares students more to industry.



There are divides academia x industry. Not enough research shared academia-industry. HCI education prepares students more to academia. HCI education prepares students more to industry.

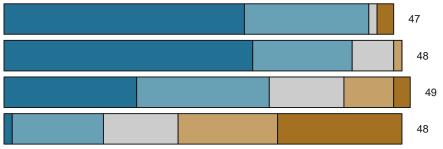
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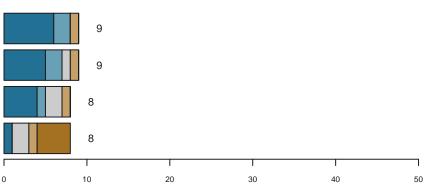
There are divides academia x industry. Not enough research shared academia-industry. HCI education prepares students more to academia. HCI education prepares students more to industry.



Students

Professors and Researchers

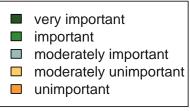


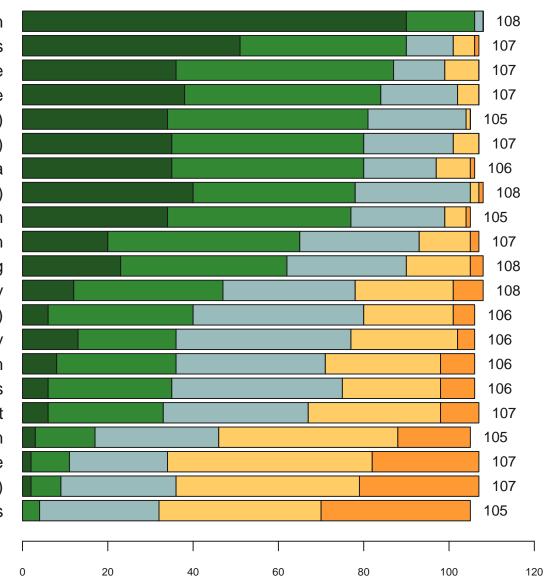


Practitioners

Disciplines

HCI is increasingly interdisciplinary. How important is it for students to study the following fields? **Disciplines** (All)

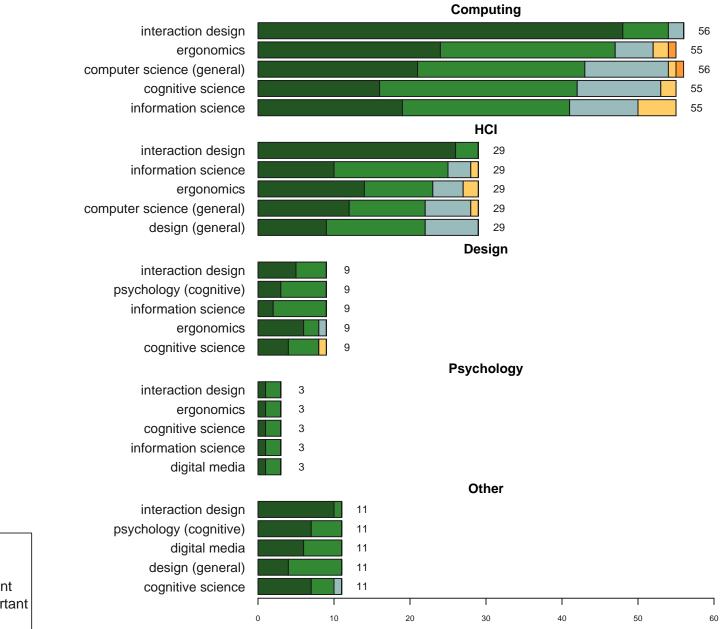


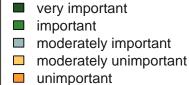


interaction design ergonomics information science cognitive science design (general) psychology (cognitive) digital media computer science (general) communication graphic design systems engineering sociology psychology (general) anthropology education statistics art business administration

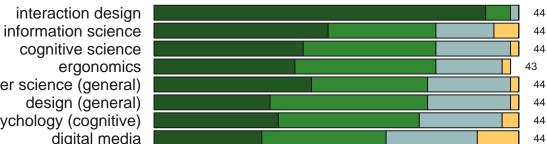
business administration philosophy of science philosophy (general) economics

Disciplines per Background - Top 5



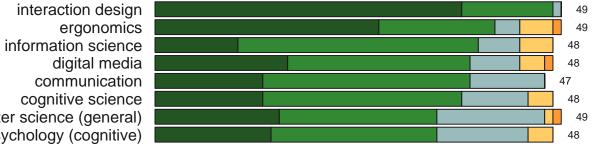


Students



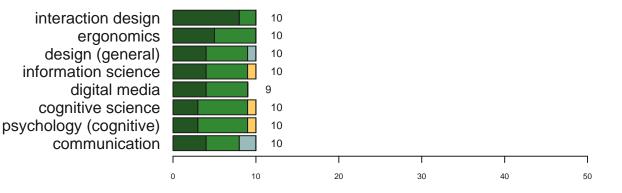
computer science (general) psychology (cognitive) digital media

Professors and Researchers



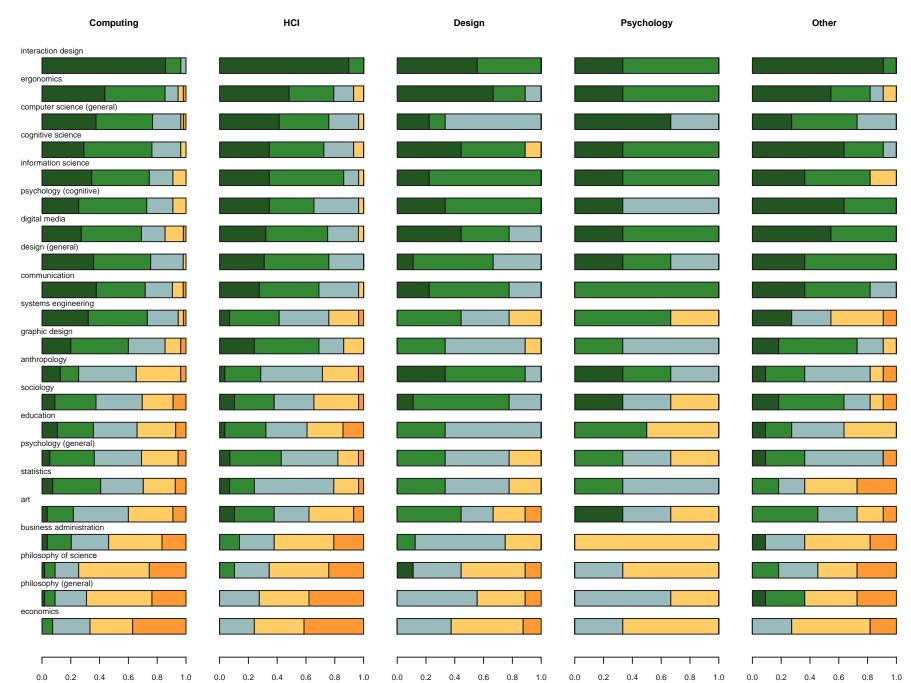
computer science (general) psychology (cognitive)

Practitioners

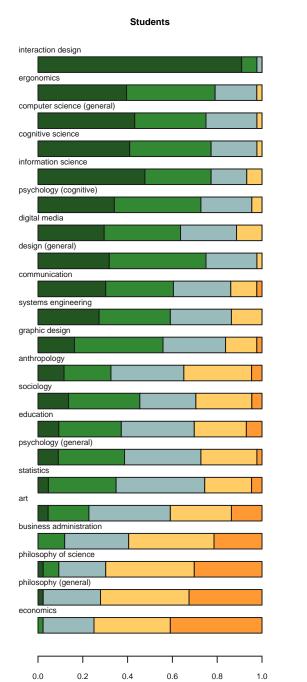


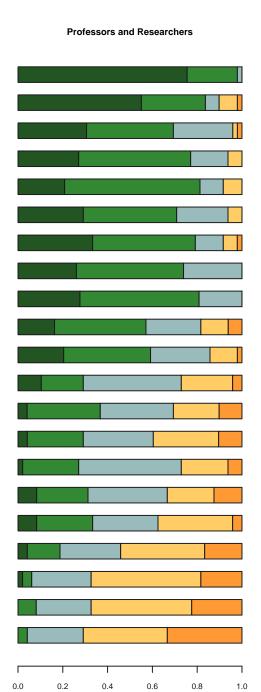
- very important important
- moderately important
- moderately unimportant
- unimportant

Disciplines per Background



Disciplines per Role



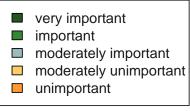


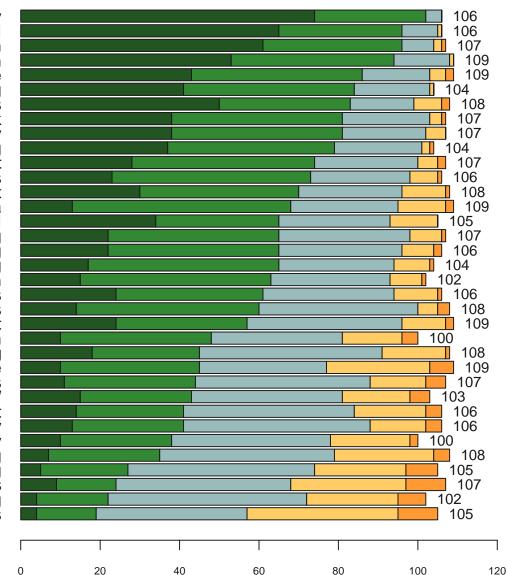
0.0 0.2 0.4 0.6 0.8 1.0

Practitioners

Topics

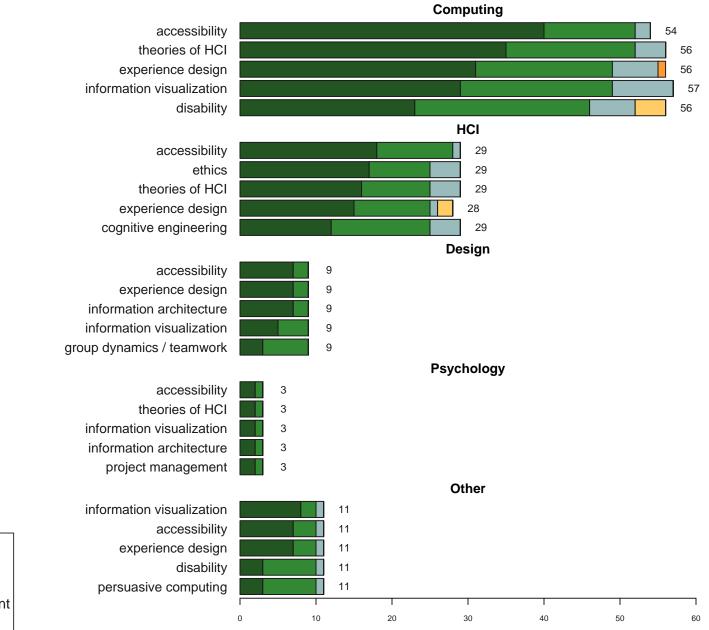
How important is it for students to study and/or become proficient in the following topics? Topics (All)

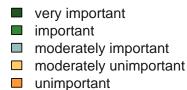




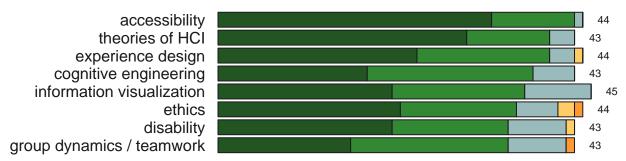
accessibility theories of HCI experience design information visualization information architecture cognitive engineering ethics group dynamics / teamwork disability semiotic engineering product development collaborative systems HCI for development social media history of HCI social computing ubiquitous computing persuasive computing distributed cognition cultural studies social network analysis project management media criticism natural language processing e-commerce game studies CSCW change management aŭgmented reality activity theory machine learning data mining health care / health informatics probabilistic computing robotics

Topics per Background - Top 5





Students

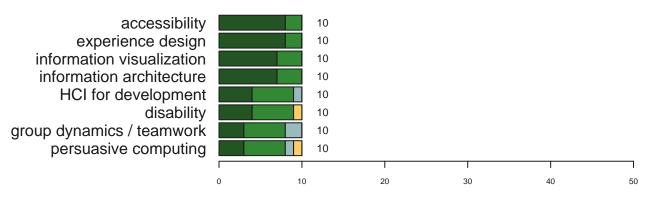


Professors and Researchers



theories of HCI experience design information visualization semiotic engineering cognitive engineering information architecture

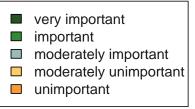
Practitioners

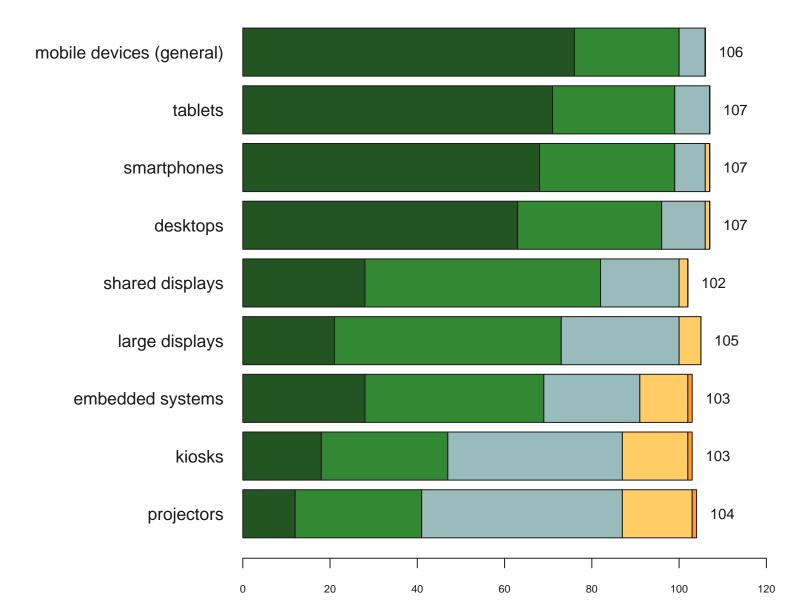


- very important
- important
- moderately important
- moderately unimportant
- unimportant

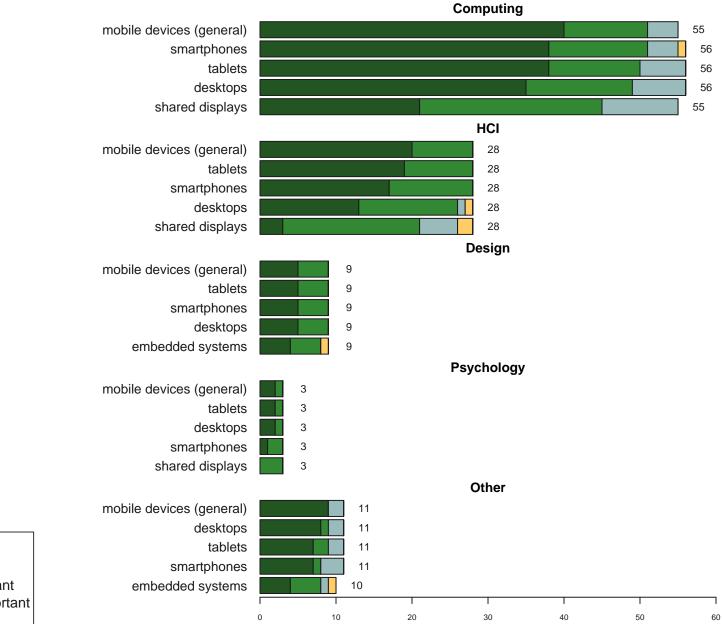
Interfaces, Displays, and Devices

How important is it for students to study and/or become proficient in the following topics? Devices (All)

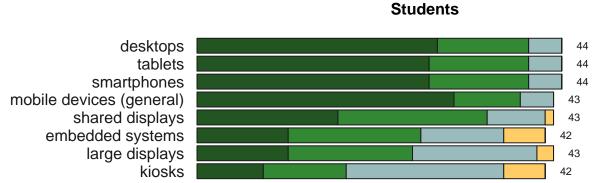




Devices per Background - Top 5



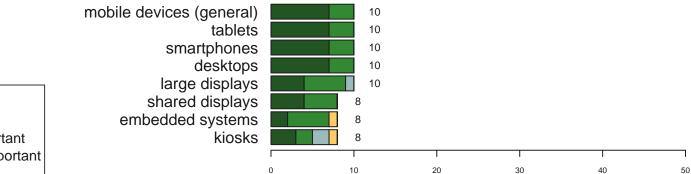
very important
 important
 moderately important
 moderately unimportant
 unimportant



Professors and Researchers



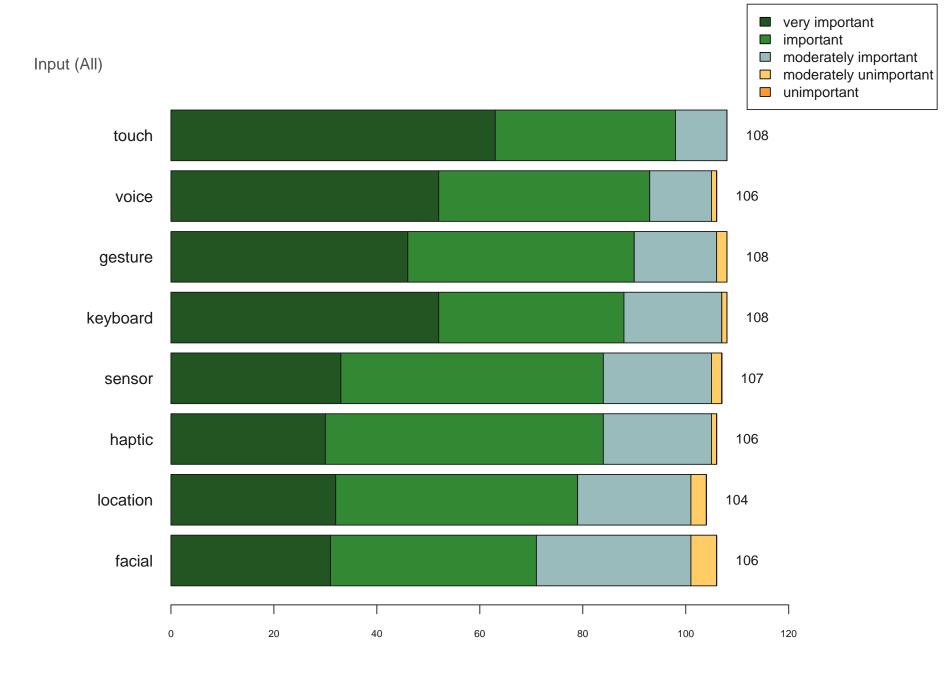




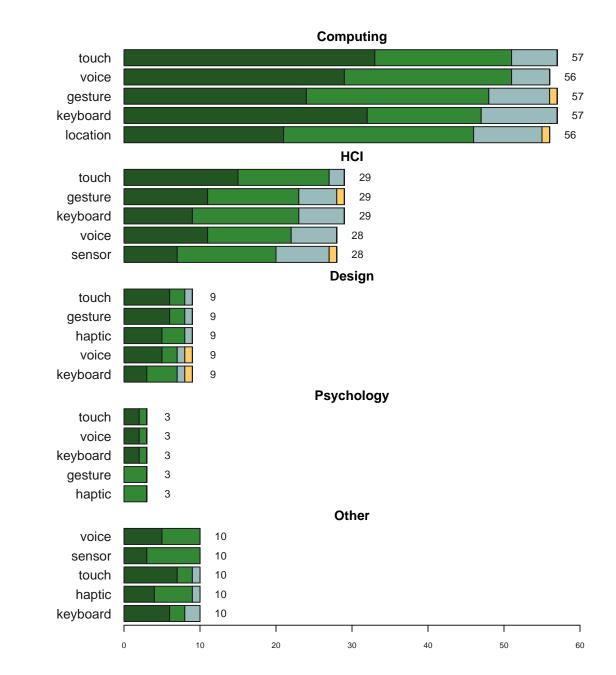
- very important
- important
- moderately important
- moderately unimportant
- unimportant

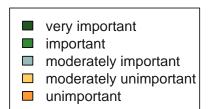
Input Modalities and Data Collection

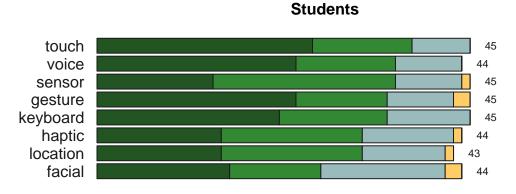
How important is it for students to study and/or become proficient in the following topics?



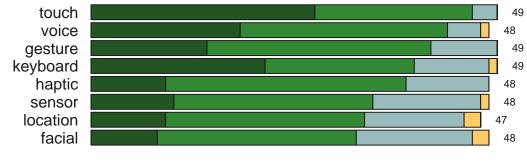
Input per Background - Top 5



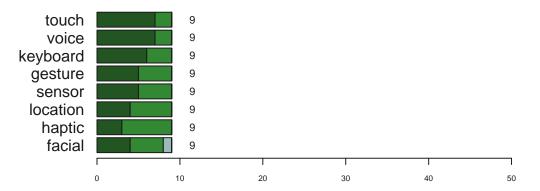


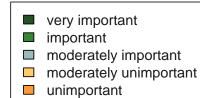


Professors and Researchers



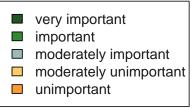
Practitioners

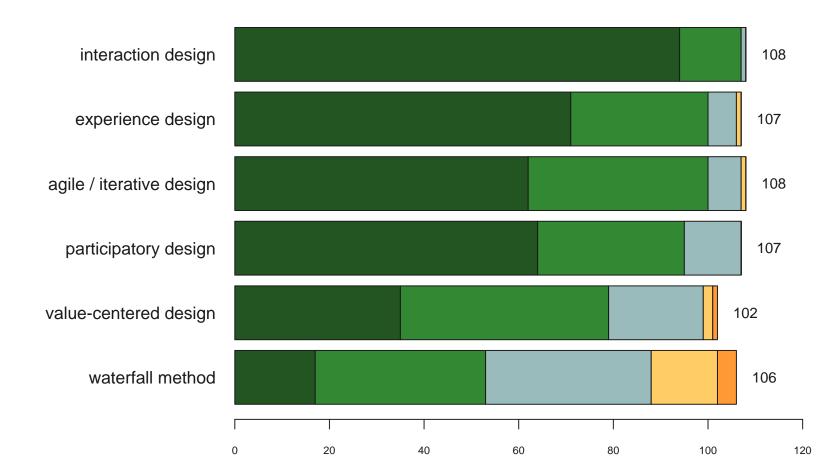




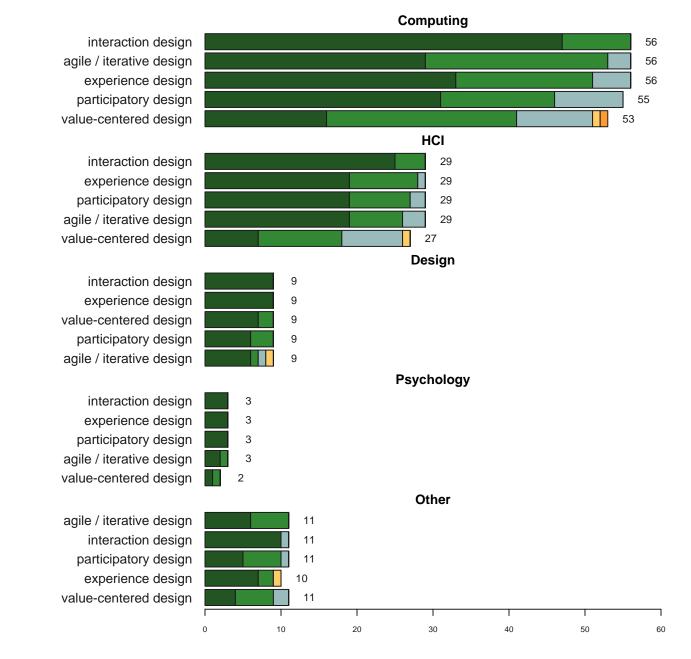
Design Paradigms and Perspectives

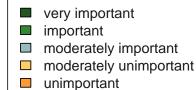
How important is it for students to study or practice the following design paradigms and perspectives?

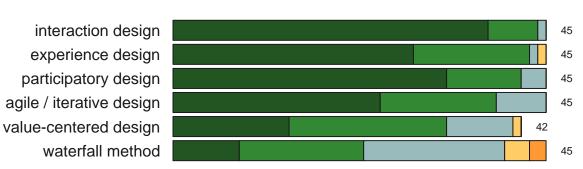




Design Paradigms per Background - Top 5

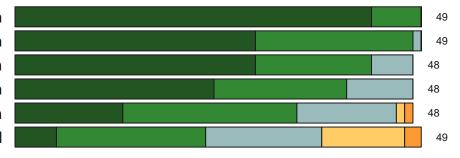






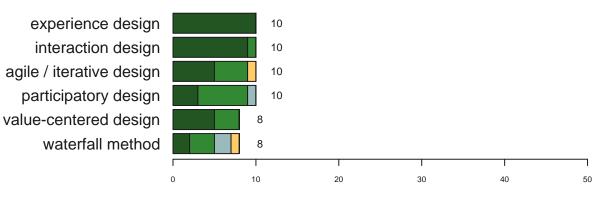
Students

Professors and Researchers



interaction design agile / iterative design experience design participatory design value-centered design waterfall method

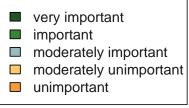


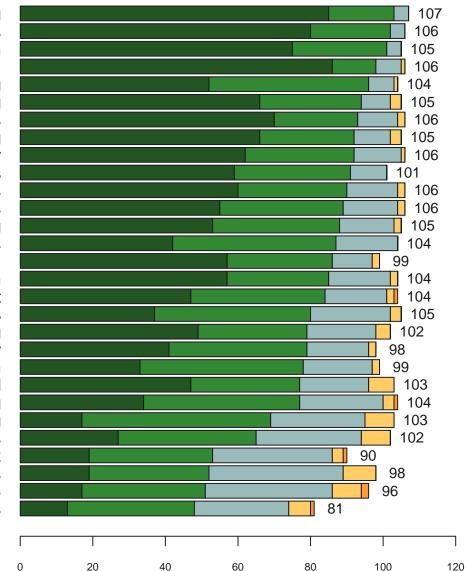


- very important important moderately important
 - moderately unimportant
- unimportant

Methods and Tools

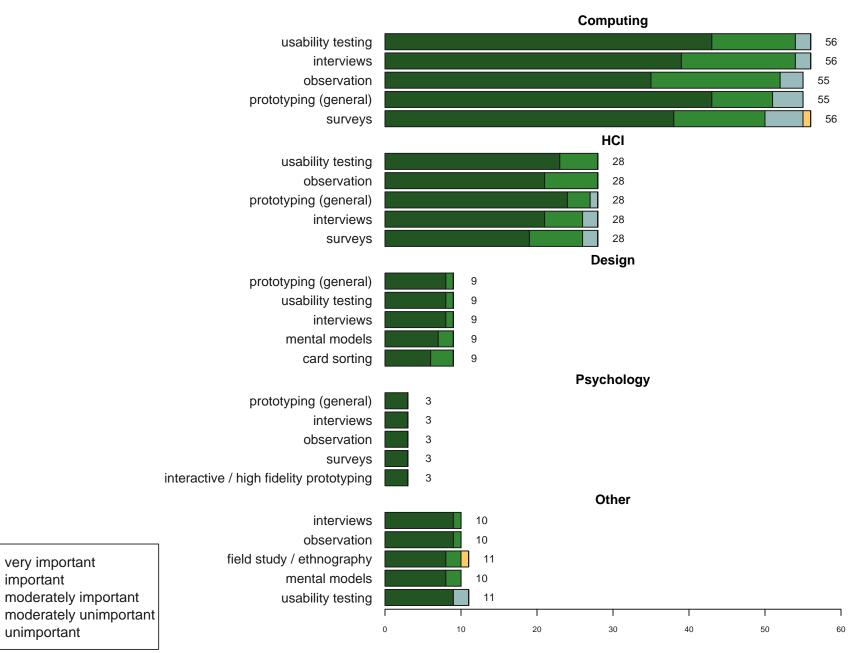
How important is it for students to study or practice the following methods and tools?





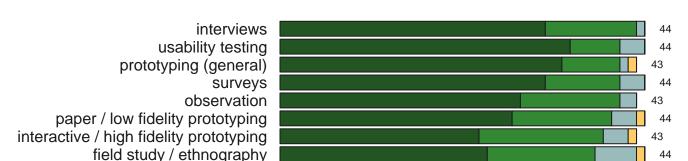
usability testing interviews observation prototyping (general) scenarios and storytelling interactive / high fidelity prototyping surveys paper / low fidelity prototyping field study / ethnography discount usability techniques heuristic analysis mental models brainstorming task analysis wireframing cognitive walkthrough persona development focus groups remote usability testing contextual inquiry model-based evaluation think aloud card sorting eye tracking clickstream analysis wizard of Oz affinity diagram analysis GOMS probes

Methods and Tools per Background - Top 5



important

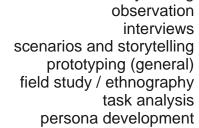
unimportant



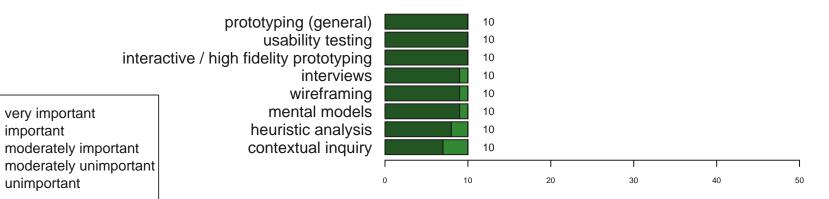
Students

Professors and Researchers





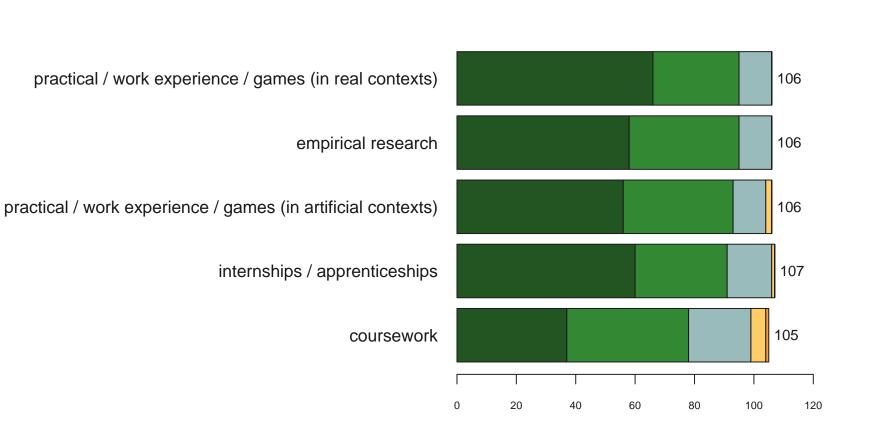
Practitioners



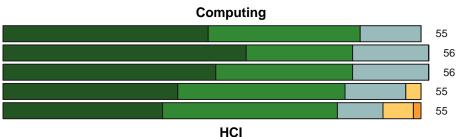
Ways of Learning

How important is it for these different ways of learning to be incorporated into HCI Education?





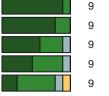
Ways of Learning per Background





20





practical / work experience / games (in real contexts) practical / work experience / games (in artificial contexts) empirical research

practical / work experience / games (in real contexts)

practical / work experience / games (in real contexts)

practical / work experience / games (in artificial contexts)

practical / work experience / games (in artificial contexts)

internships / apprenticeships

empirical research

empirical research

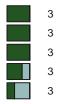
coursework

coursework

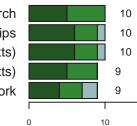
internships / apprenticeships

internships / apprenticeships

coursework



- practical / work experience / games (in real contexts)
 - empirical research
- practical / work experience / games (in artificial contexts)
 - internships / apprenticeships
 - coursework



- empirical research
- internships / apprenticeships
- practical / work experience / games (in artificial contexts)
 - practical / work experience / games (in real contexts)

coursework

Psychology

Other

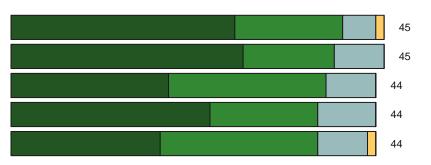
30

40

50

60

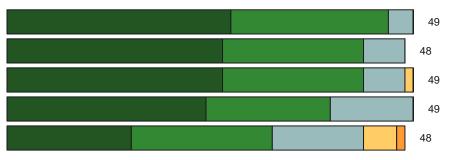
Ways of Learning per Role



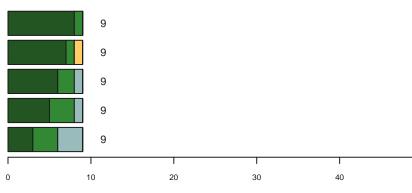
Students

internships / apprenticeships practical / work experience / games (in real contexts) practical / work experience / games (in artificial contexts) empirical research coursework



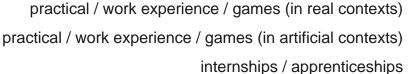


empirical research practical / work experience / games (in real contexts) practical / work experience / games (in artificial contexts) internships / apprenticeships coursework



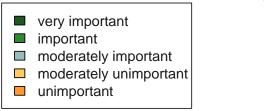
Practitioners

50



empirical research

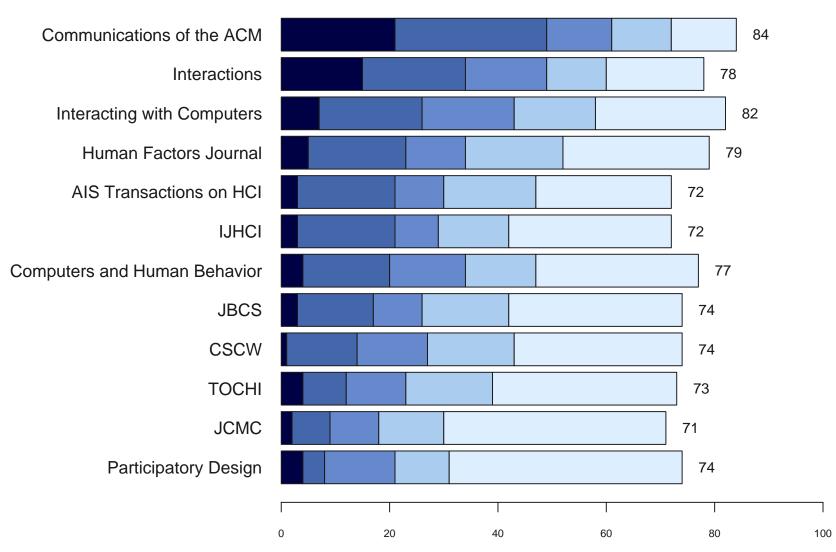
coursework



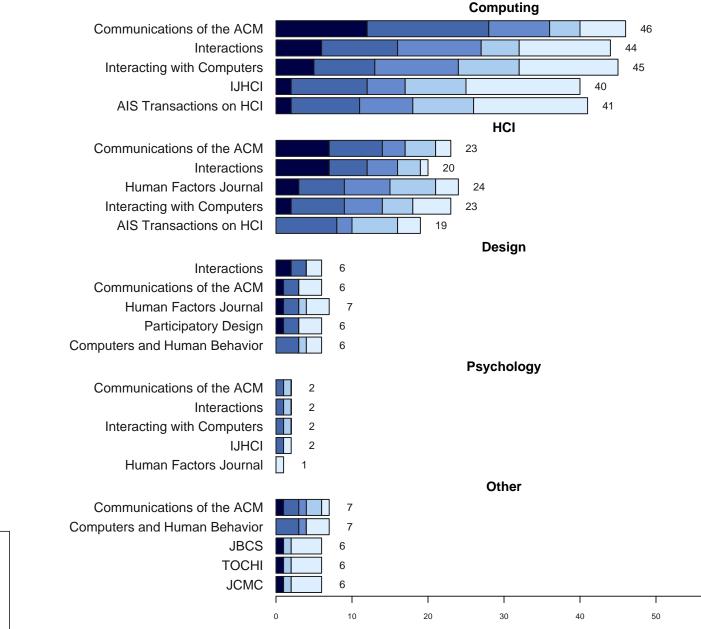
Journals you Read

How often do you read these journals? (All)

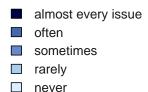




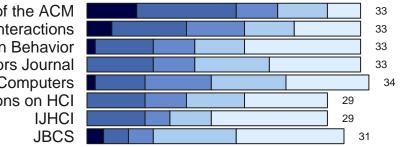
How often do you read these journals? per Background - Top 5



60



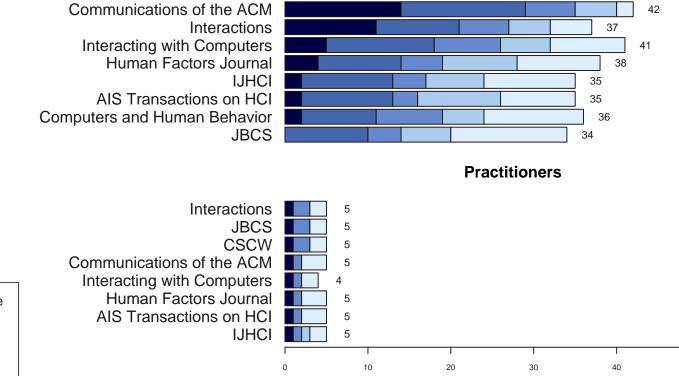
Students

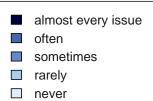


Communications of the ACM Interactions Computers and Human Behavior Human Factors Journal Interacting with Computers AIS Transactions on HCI IJHCI

Professors and Researchers

50





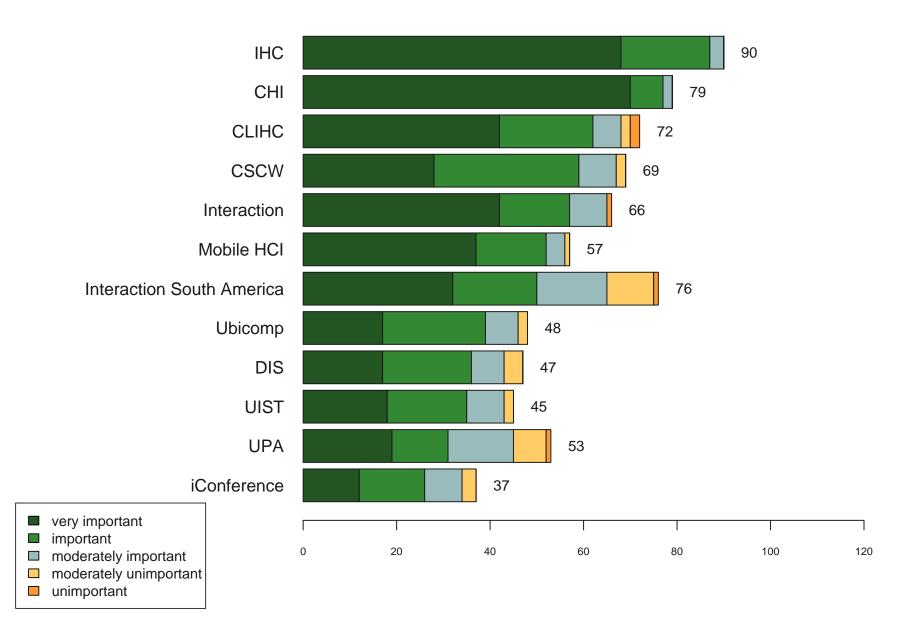
Journals

(open-ended responses)

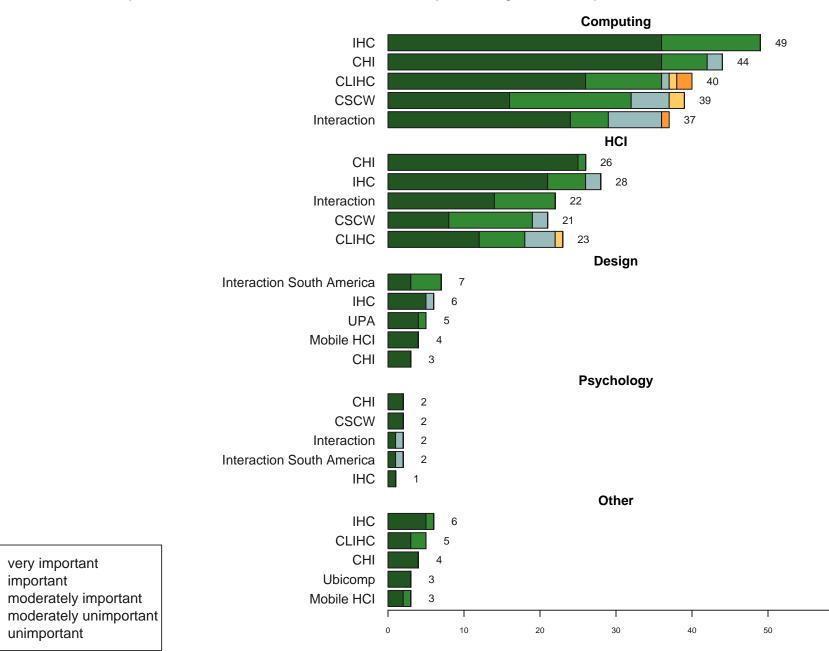
"I read UPA publications and texts by Nielsen and by Don Norman"

| Journal | Frequen |
|---|---------|
| International Journal of Human-Computer Studies | 5 |
| Behaviour and Information Technology | 4 |
| IST | 4 |
| Journal of Information Visualization | 4 |
| JSS | 4 |
| Computers and Education | 3 |
| Human-Computer Interaction | 3 |
| IEEE Transactions on Systems, Man and Cybernetics, Part A | 2 |
| International Journal of Human-Computer Studies | 2 |
| ACM TOMCCAP | |
| Pervasive Computing | |
| Universal Access in Information Society | |

Conferences' Importance to HCI Research

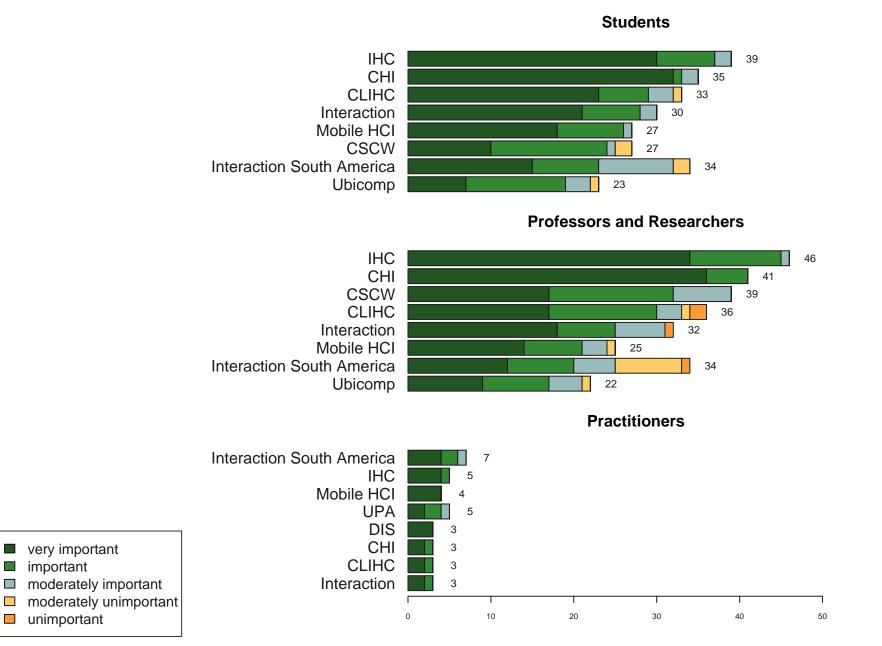


Conferences' importance to advance HCI RESEARCH? per Background - Top 5



60

important



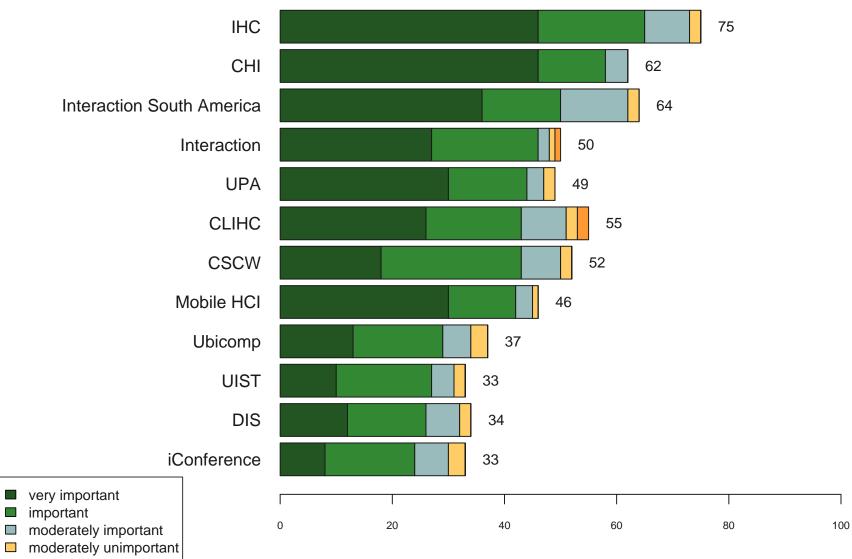
Conferences – Research (open-ended responses)

"Professionals in industry have little knowledge about the existence of most events related to the area..."

"Regional meetings promoted by groups such as IxDA, UPA, WUD, AI etc."

| Conference | Importance | Mentions |
|---------------------|------------|----------|
| AIED | 5 | |
| INTERACT | 5 | 3 |
| ITS (Tutoring Sys.) | 5 | |
| IxDA | 5 | |
| SBIE | 5 | |
| UMAP | 5 | |
| USIHC | 5 | |
| AVI | 4 | 2 |
| HCII | 4 | |
| ICALT | 4 | |
| ICWE | 4 | |
| IFIP WCC | 4 | |
| INTERACT | 4 | |
| IUI | 4 | |
| Measuring Behavior | 4 | |
| SBIE | 4 | |
| SBSC | 4 | |
| SEMISH | 4 | |
| SIGDOC | 4 | 2 |
| USIHC | 4 | |
| WebMedia | 4 | |
| CAISE | 3 | |
| CSEDU | 3 | |
| ED-MEDIA | 3 | |
| IADIS WWW | 3 | |
| SAC | 3 | |
| Webist | 3 | |
| WebMedia | 3 | 2 |

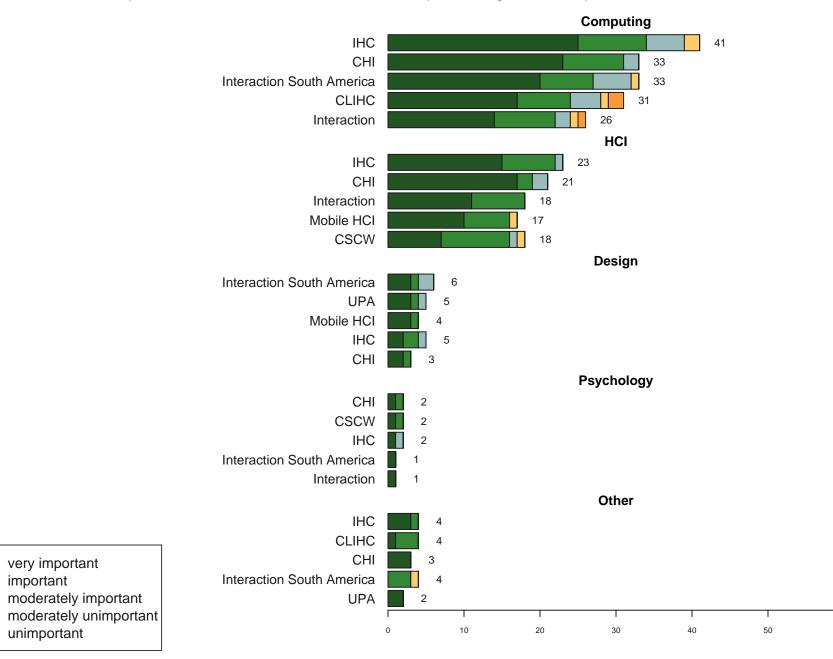
Conferences' Importance to HCI Practice



unimportant

Conferences' importance to advance HCI PRACTICE? per Background - Top 5

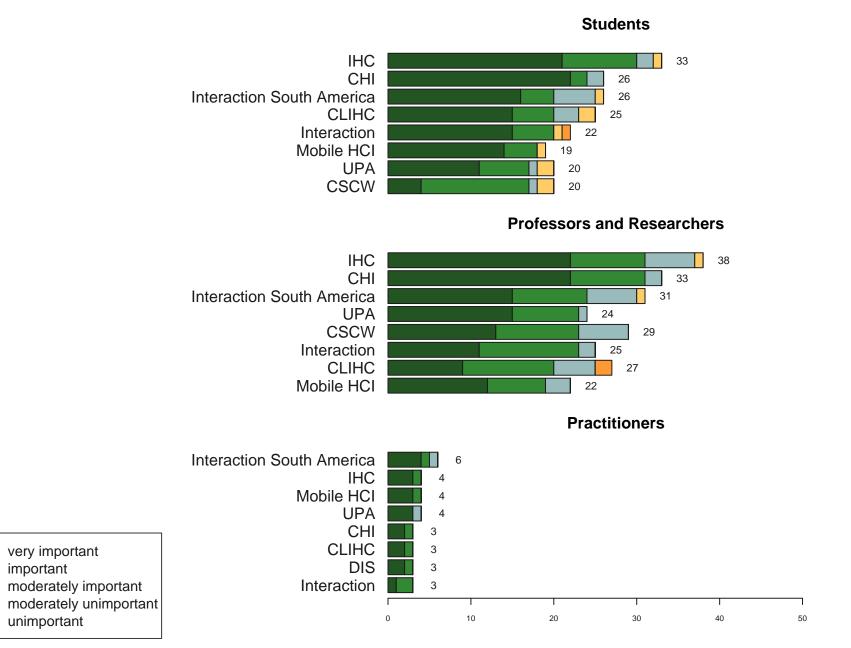
important



60

important

unimportant



Conferences – Practice (open-ended responses)

"Practice is daily, developing your work/project, not in conferences."

"Regional meetings promoted by groups such as IxDA, UPA, WUD, AI etc."

| Conference | Importance | Mentions |
|--|------------|----------|
| digital age 2.0 | 5 | |
| SBIE | 5 | |
| SXSW | 5 | |
| INTERACT | 4 | |
| HCI International | 3 | |
| IUI | 3 | |
| WebMedia | 3 | |
| EuroiTV | | |
| ITS - Interactive Tabletops and Surfaces | | |
| National HCI events | | |
| TEI | | |

Discussion

- advocating the importance of HCI is still an issue
 within CS + general public
- HCl curricula
 - unified x flexible / diverse
 - practice + theory
 - depth + breadth
- collaboration gaps
 - across departments / disciplines
 - academia–industry

Thank you!

Simone D. J. Barbosa, PUC-Rio simone@inf.puc-rio.br