

Actuaries: A Narrow Profession?

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Author's background:


- ***18 years' teaching Actuarial Studies at Macquarie University, Sydney***
- ***Taught actuarial students in USA, Canada, Kazakhstan, Beijing, Hefei, Shanghai, Chengdu, HK, Singapore***
- ***Teaches Course 7 Seminars for SoA***
- ***DipEd, MHEd***
- ***Research interest: student learning***

The text is centered and surrounded by several overlapping circles of varying shades of light blue and white. The circles are arranged in a way that they appear to be floating around the text, with some overlapping each other and the text itself.

***Actuaries:
A Narrow
Profession?***



YES!



***.... said several accountants and
statisticians the economists
are still undecided!***



Presentation outline:

- ***Underlying theory: David Kolb's Experiential Learning Model***
- ***Survey: IAAust members***
- ***A priori expectations: actuaries?***
- ***Results: a selection of insights***
- ***Discussion: some conclusions, & some suggested implications for actuarial education***

Experiential Learning Model

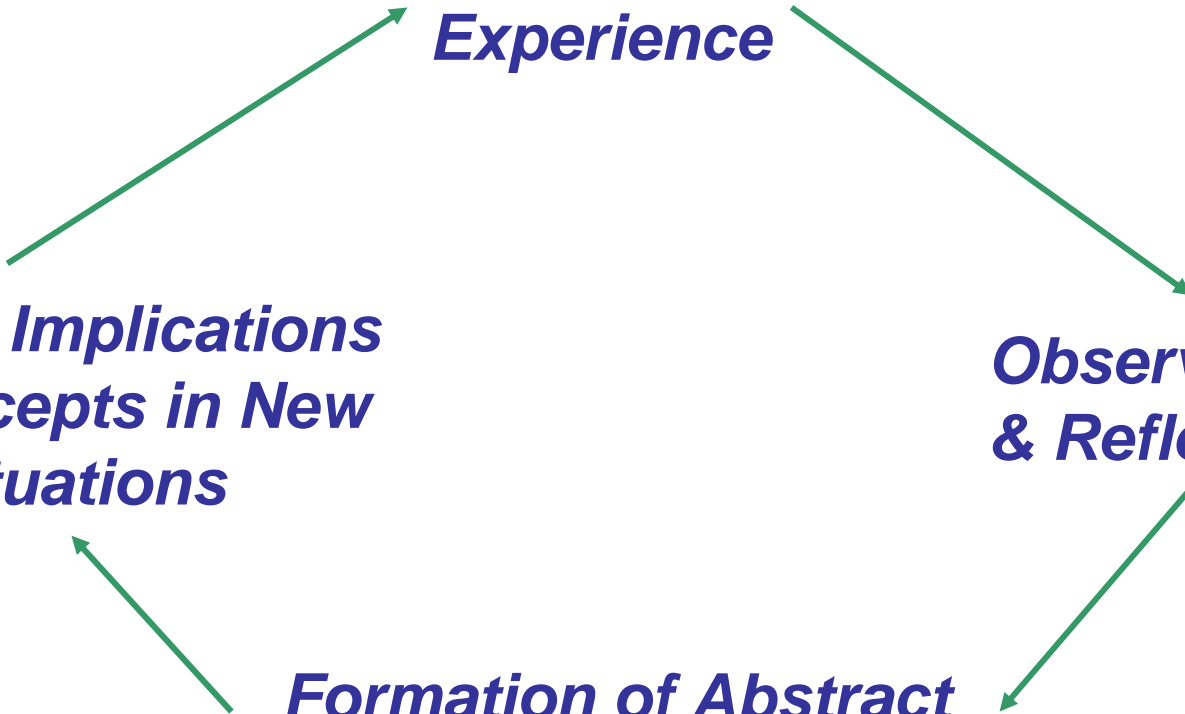
***David Kolb
(1981)***

***Concrete
Experience***

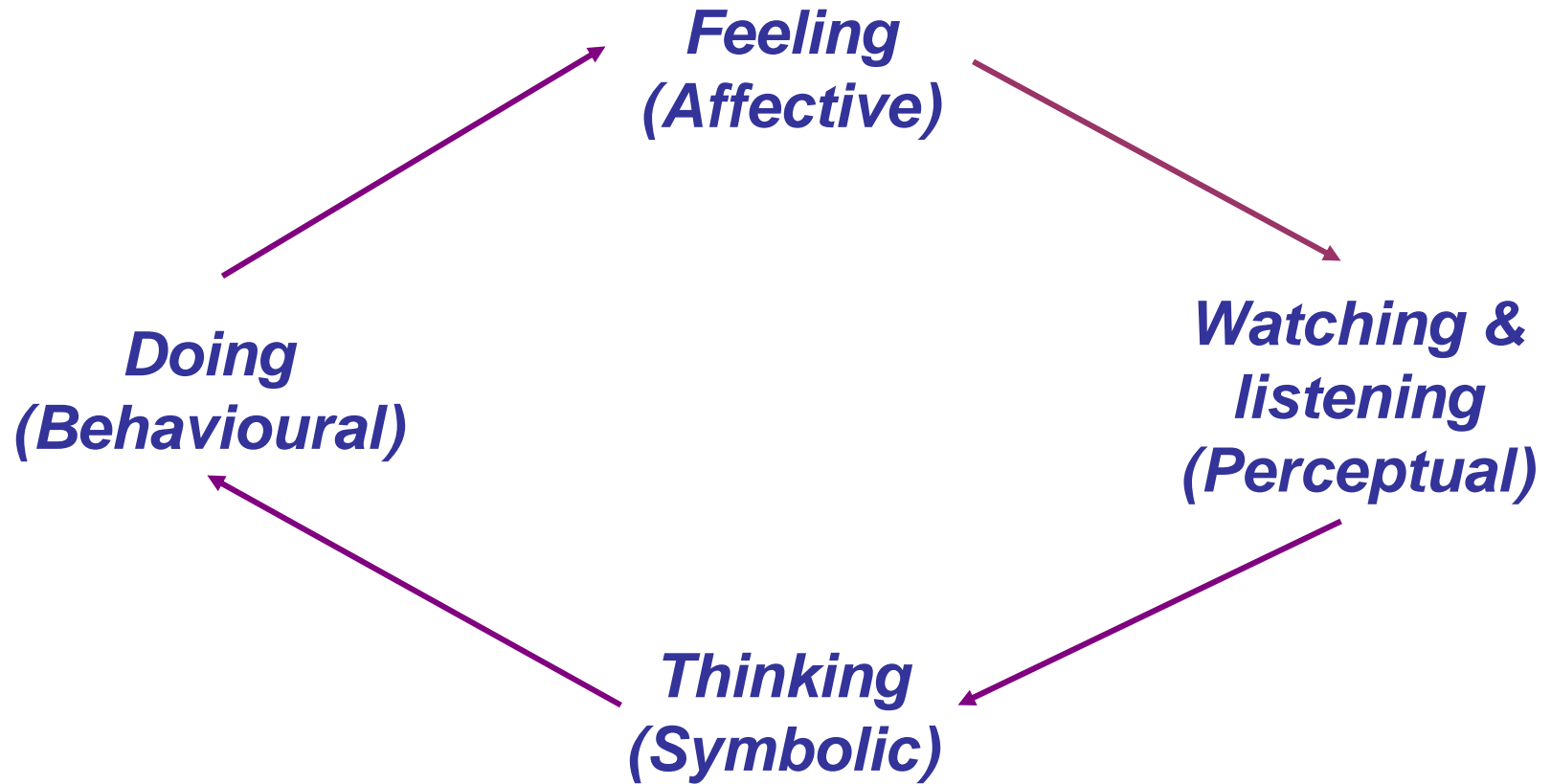
***Testing Implications
of Concepts in New
Situations***

***Observations
& Reflections***

***Formation of Abstract
Concepts & Generalisations***



Experiential Learning Model



Stages: Kolb's Learning Cycle


- ***Concrete Experience (CE)***
- ***Reflective Observation (RO)***
- ***Abstract Conceptualisation (AC)***
- ***Active Experimentation (AE)***

Learning Cycle Stages

- **CE (Learning from feeling): Learning from specific experiences; relating to people; being sensitive to feelings and people**
- **RO (Learning by watching and listening): Carefully observing before making judgments; viewing issues from different perspectives; looking for the meaning of things**

Learning Cycle Stages

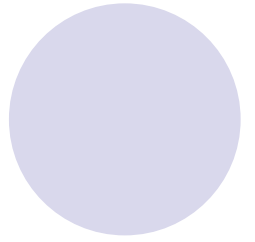
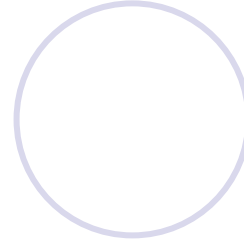
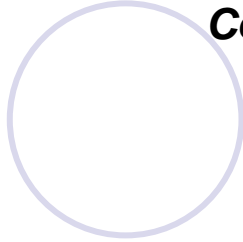
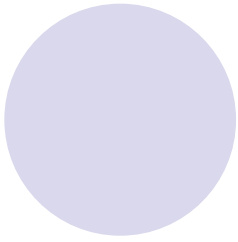
- *AC (Learning by thinking): Logically analysing ideas; systematic planning; acting on an intellectual understanding of a situation*
- *AE (Learning by doing): Ability to get things done; risk-taking; influencing people and events through action*



“ ... learning requires abilities that are polar opposites and... the learner, as a result, must continually choose which set of learning abilities he will bring to bear in any specific learning situation.”

David Kolb (1976)

Concrete Experience



Accommodator

Diverger

Active

Reflective

Experimentation

Observation

Converger

Assimilator

Abstract Conceptualisation

Accommodators

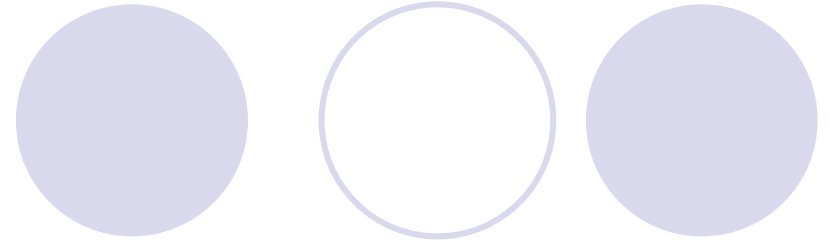
- ***Strengths:***

- ➔ ***Getting things done***
- ➔ ***Leadership***
- ➔ ***Risk-taking***
- ➔ ***New experiences***
- ➔ ***Intuitive (trial & error)***

- ***Weaknesses:***

- ➔ ***May be 'pushy' or impatient***
- ➔ ***Meaningless activity***
- ➔ ***Work not completed on time***
- ➔ ***Impractical plans***
- ➔ ***Not goal-directed***

***Divergers***



- ***Strengths:***

- ➔ ***Imaginative ability***
- ➔ ***Understanding people***
- ➔ ***Recognising problems***
- ➔ ***Brainstorming***

- ***Weaknesses:***

- ➔ ***Can be paralysed by alternatives***
- ➔ ***Can't make decisions***

Convergers

- ***Strengths:***

- ➔ ***Problem-solving***
- ➔ ***Decision-making***
- ➔ ***Deductive reasoning***
- ➔ ***Defining problems***

- ***Weaknesses:***

- ➔ ***May solve the wrong problem***
- ➔ ***Hasty decision-making***
- ➔ ***Lack of focus***
- ➔ ***No shifting of ideas***

***Assimilators***



- ***Strengths:***

- ➔ ***Prefer inductive reasoning***
- ➔ ***Planning & models***
- ➔ ***Interested in ideas & concepts***
- ➔ ***Less concerned with practicalities***

- ***Weaknesses:***

- ➔ ***Castles in the air***
- ➔ ***No practical application***
- ➔ ***Unable to learn from mistakes***

Concrete Experience

- **Commerce**
- **Demography**
- **Education**
- **Environmental Studies**
- **Geography**
- **Political Science**
- **Public Policy**

- **English**
- **History**
- **Linguistics**
- **Philosophy**
- **Sociology**

Active

Reflective

Experimentation

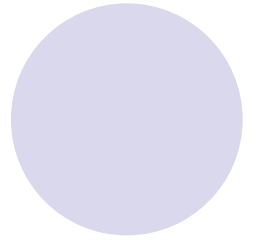
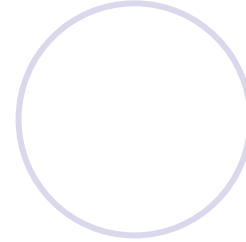
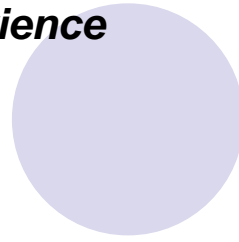
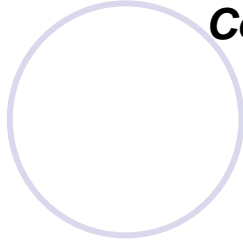
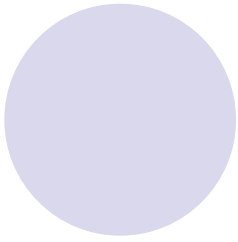
Observation

- **Applied Economics**
- **Applied Physics**
- **Medical Research**
- **Computing**
- **Engineering**
- **Forestry**
- **Law**

- **Astronomy**
- **Chemistry**
- **Classics**
- **Earth Sciences**
- **Economics**
- **Mathematics**
- **Physics**

Abstract Conceptualisation

Concrete Experience



Accommodator

Diverger

Active

Reflective

Experimentation

Observation

**WHERE MIGHT
WE EXPECT TO
FIND
ACTUARIES?**

Converger

Assimilator

Abstract Conceptualisation

Actuaries: Expected Learning Styles

- ***Technical: Convergents or Assimilators?***
- ***Managerial: Accommodators or Divergers?***
- ***Consulting: Accommodators?***
- ***Marketing: Accommodators?***
- ***Software/IT: Convergents or Accommodators?***

Learning Style Inventory (LSI)

- ***12 incomplete sentences***
- ***Each with 4 alternative endings***
- ***Rank the four endings (no ties)***
- ***4 → describes best how you learn***
- ***1 → least like how you learn***
- ***Each set of alternative endings includes one each of CE, RO, AC, AE***

Example: Sentence completion

■ ***When I learn***

➔ ***I get involved***

➔ ***I like to observe***

➔ ***I evaluate things***

➔ ***I like to be active***

Example: Sentence completion

■ *When I learn*

➔ **2** *I get involved*

➔ **3** *I like to observe*

➔ **1** *I evaluate things*

➔ **4** *I like to be active*

Example: Sentence completion

■ *When I learn*

➔ **2** *I get involved* (CE)

➔ **3** *I like to observe* (RO)

➔ **1** *I evaluate things* (AC)

➔ **4** *I like to be active* (AE)



LSI: Scoring

- ***For each learning style, sum the 12 ranks***
- ***Four raw scores (range: 12 to 48)***
- ***Determine combination scores:***
 - ➔ ***AC - CE (range -36 to +36)***
 - ➔ ***AE - RO (range -36 to +36)***
- ***Plot the (AC-CE) and (AE-RO) pair***



Personal data collected

- ***Year of birth***
- ***Sex***
- ***Membership class (S, A, F)***
- ***Residence (NSW, Vic, NZ, HK, Sing, etc)***
- ***Principal area of activity***
- ***Principal job function***
- ***Educational route***
- ***Satisfaction with current work***

Principal area of activity

- ***Life insurance***
- ***General insurance***
- ***Superannuation***
- ***Health insurance***
- ***Reinsurance***
- ***Banking***
- ***Finance***
- ***Education***
- ***Software/IT***
- ***Investment***
- ***Retired***
- ***Other***

Principal job function

- ***Technical/analytical***
- ***Planning & evaluating***
- ***Managerial/leadership***
- ***Teaching/education***
- ***Consulting/advising***
- ***Marketing/sales***
- ***Other***

Actuarial educational route

- ***1 Includes a Macquarie degree or diploma in actuarial studies***
- ***2 Includes a non-Macquarie degree or diploma in actuarial studies***
- ***3 Includes a university degree or diploma, but not in actuarial studies***
- ***4 Does not include a university degree or diploma***



Satisfaction with current work

- ***Please indicate on the 'agree/disagree' scale below your response to this statement about your current job:***
- ***I am satisfied that the work I am now doing allows me adequate opportunity to express my current level of knowledge, skills, experience and other professional attributes.***

Satisfaction with current work

■ *Agree/disagree scale*

➔ **1** *Agree strongly*

➔ **2** *Agree*

➔ **3** *Neither agree nor disagree*

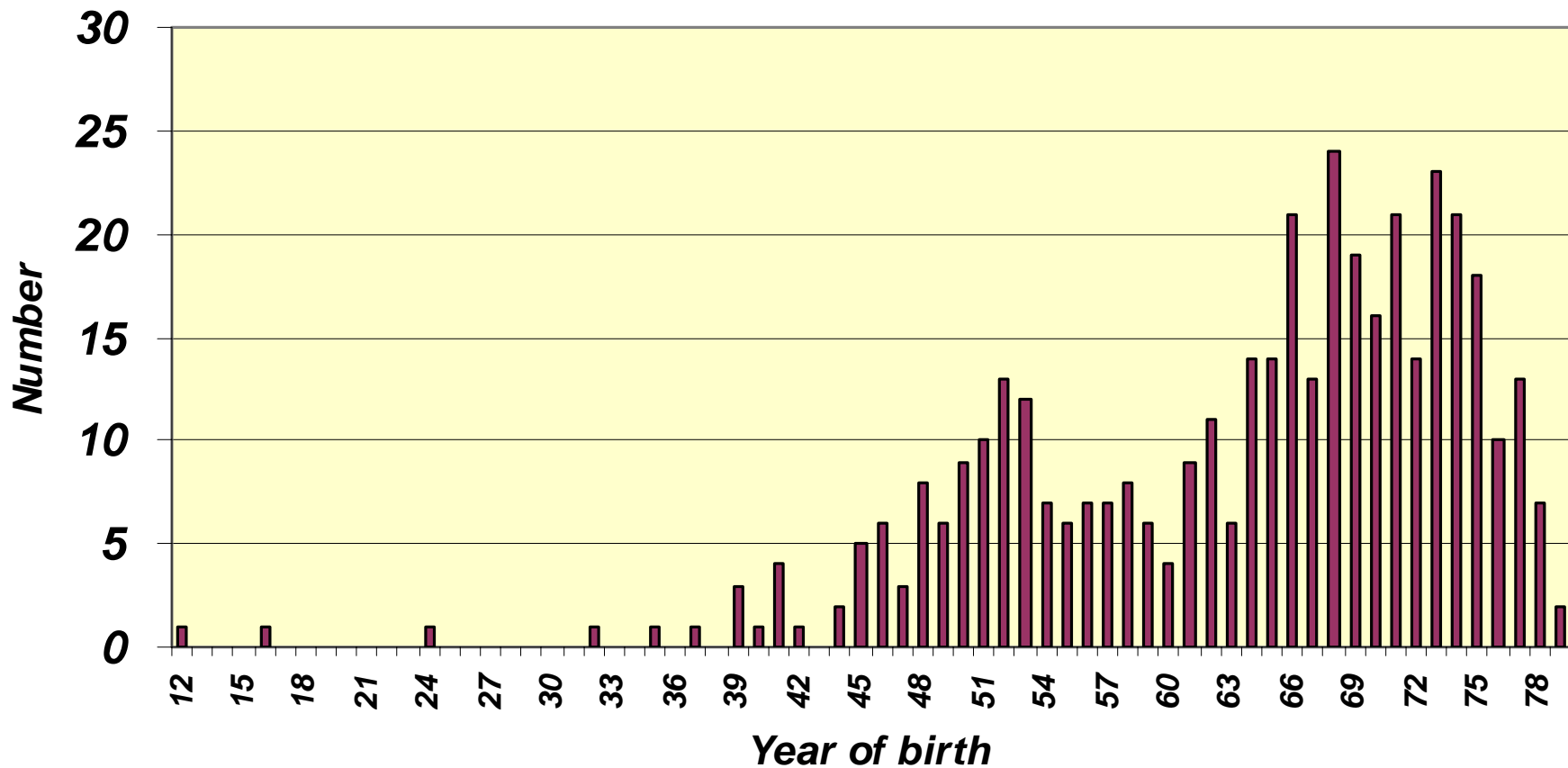
➔ **4** *Disagree*

➔ **5** *Disagree strongly*

Survey respondents

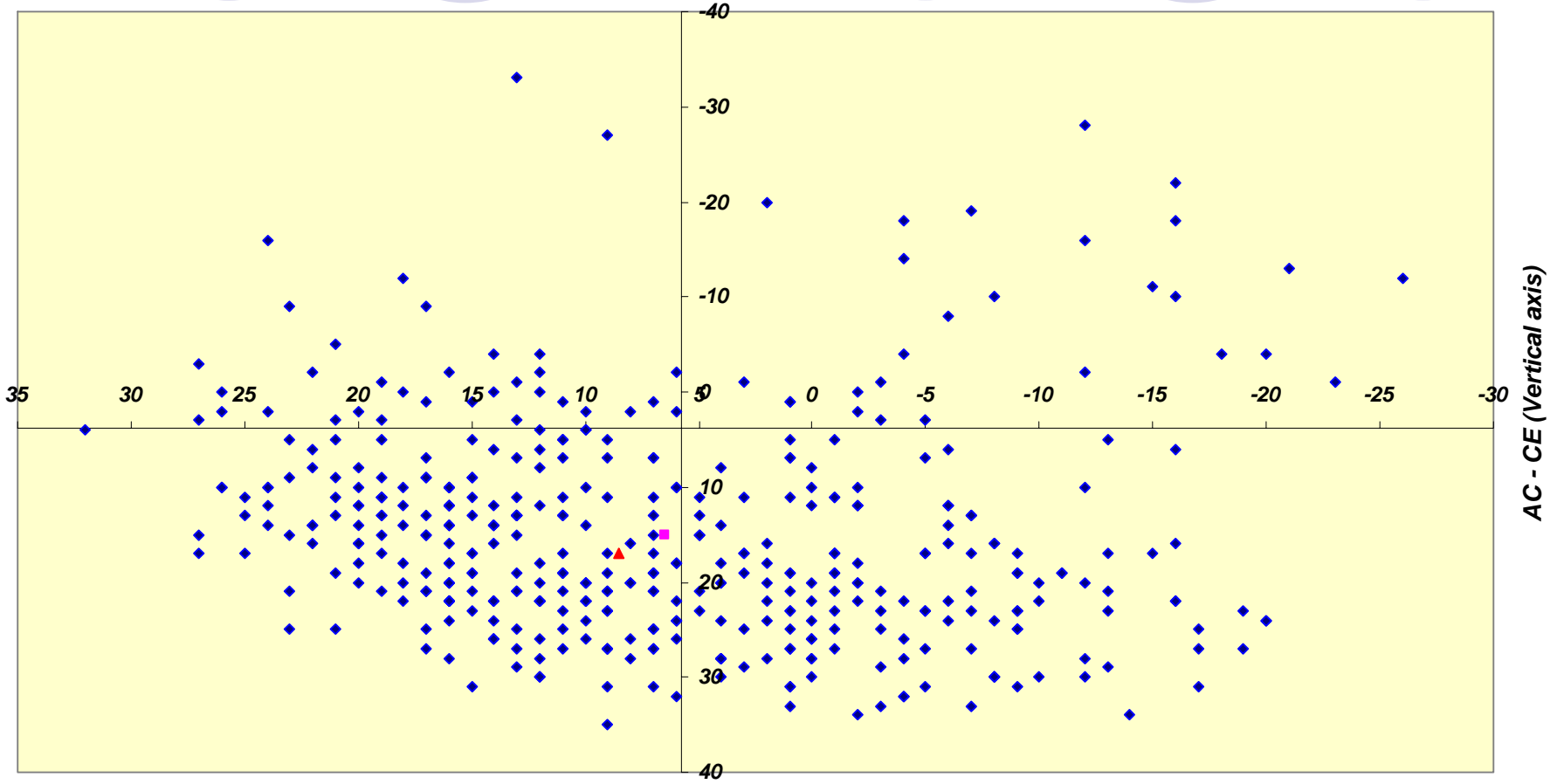
- ***412 complete (or almost!) surveys***
- ***Males/Females: 76%/24%***
- ***Membership: F(67%), A(17%), S(16%)***
- ***NSW(60%), Vic(19%), Other Aust(7%), New Zealand(2%), Other o'seas(12%)***
- ***YOB: Range(1912-1979), Median(1966)***
- ***Work area: Approximately one-third in each of Life, (GI + Super) and Others***
- ***Educational route: A/S degree(56%), Non-A/S degree non-A/S(40%), No degree(4%)***

ALL RESPONDENTS BY YEAR OF BIRTH



LEARNING STYLE TYPE: ALL (n=412)

AE - RO (Horizontal axis)



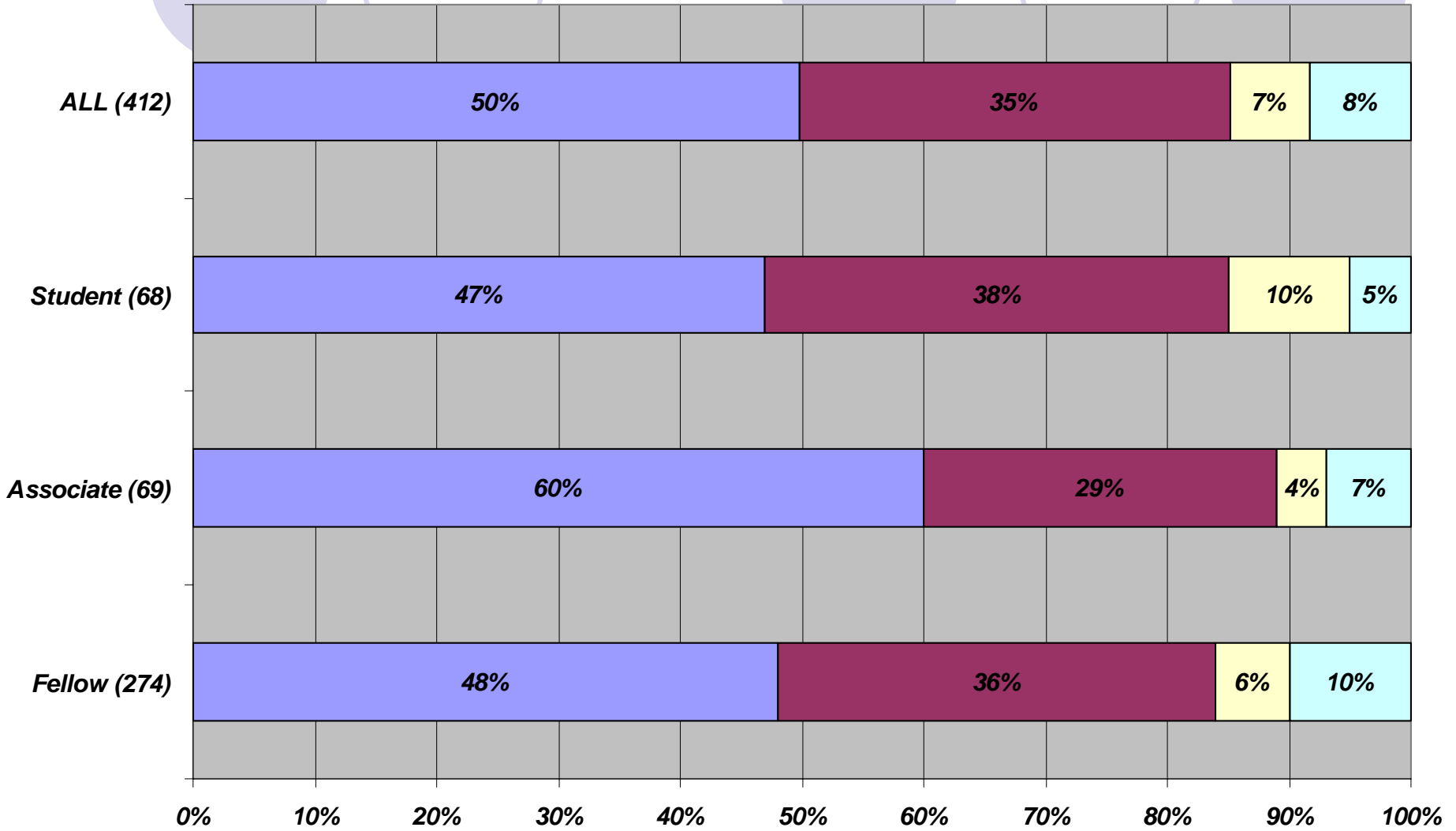


LST distribution by sex

Sex	<i>n</i>	CON	ASS	DIV	ACC
Males	310	49%	37%	7%	8%
Females	100	53%	30%	7%	10%
ALL	412	50%	35%	7%	8%

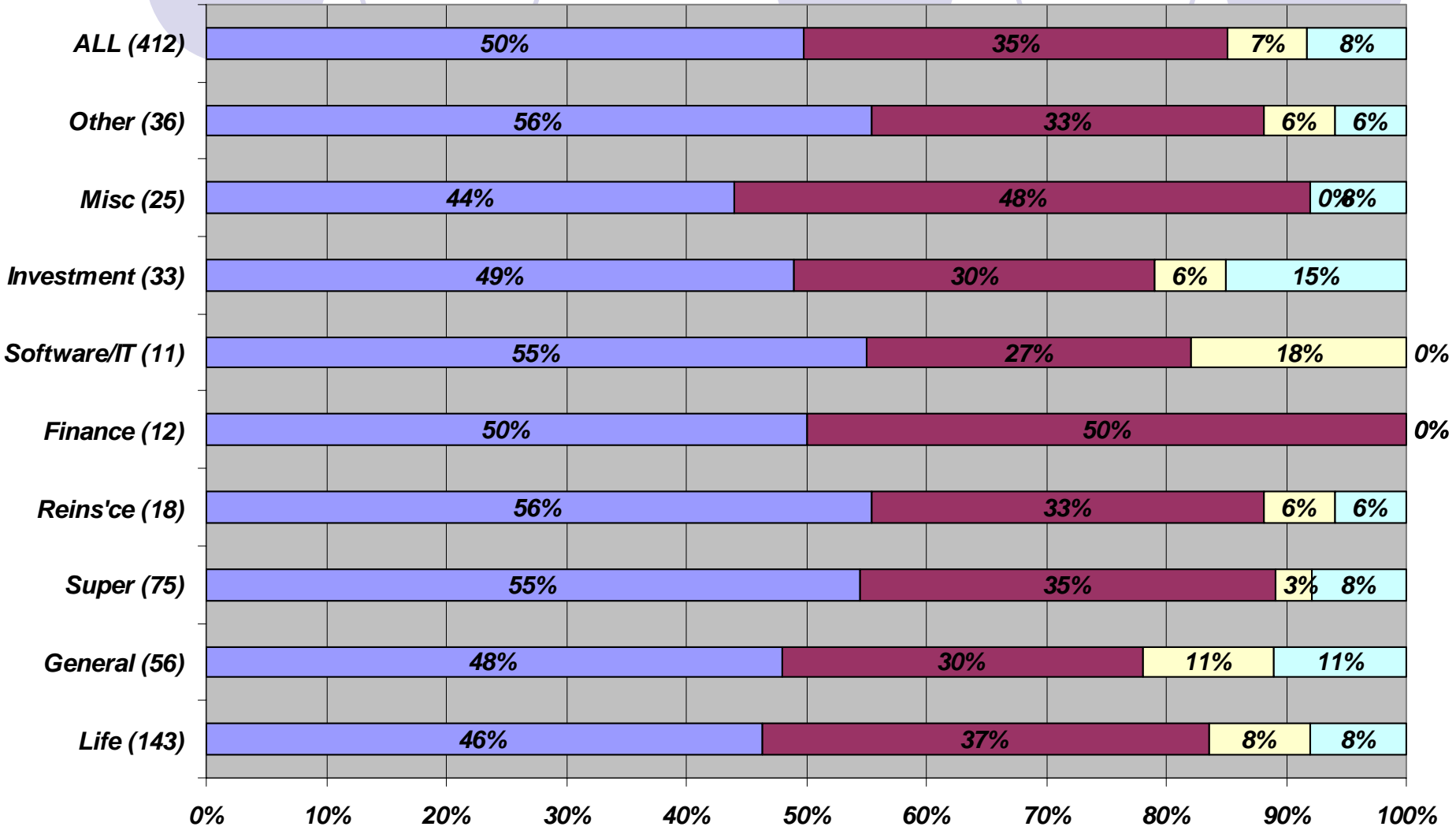
LST DISTRIBUTION BY MEMBERSHIP

■ **Converger** ■ **Assimilator** ■ **Diverger** ■ **Accommodator**



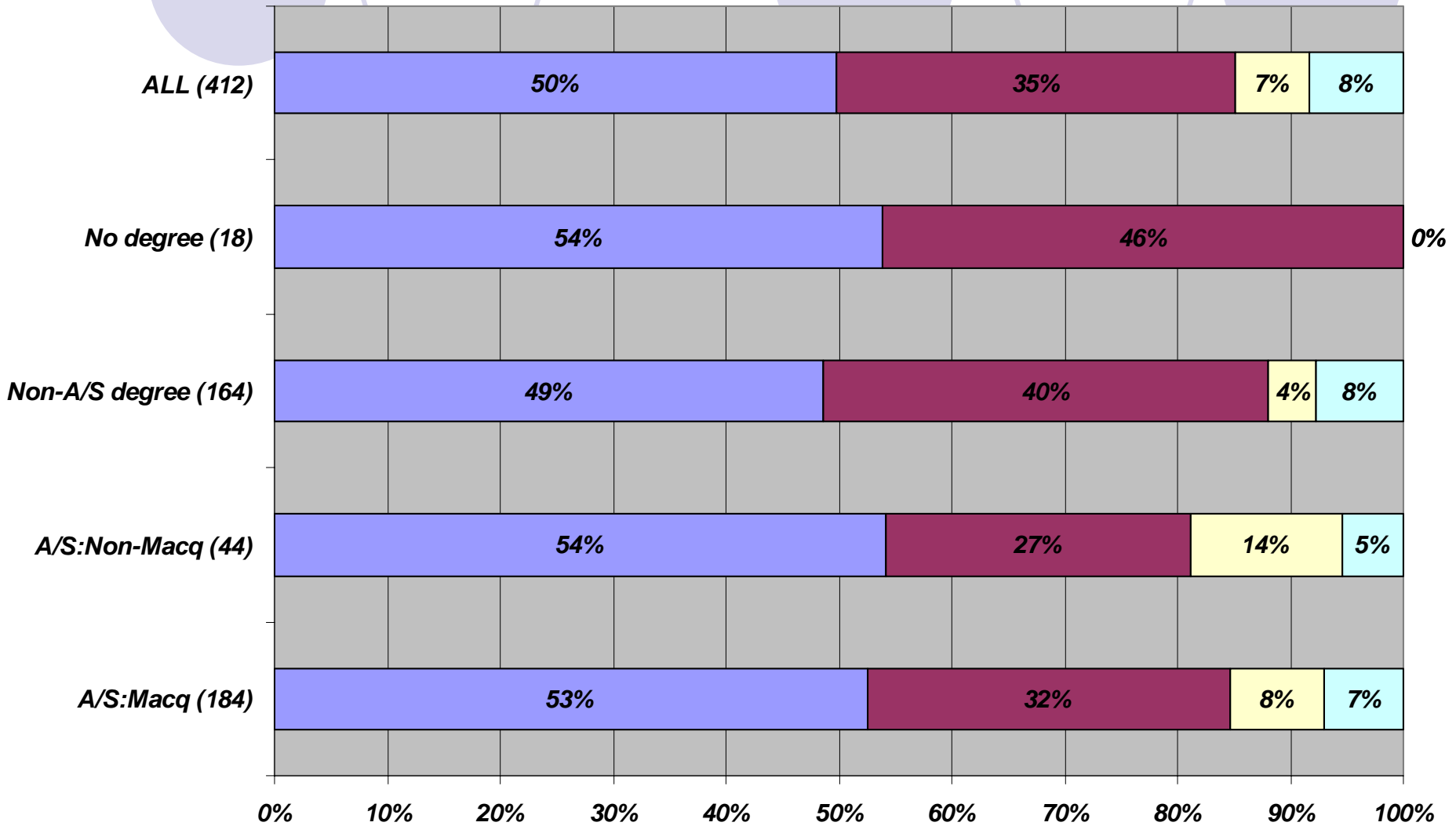
LST DISTRIBUTION BY PRACTICE AREA

■ **Converger**
■ **Assimilator**
■ **Diverger**
■ **Accommodator**



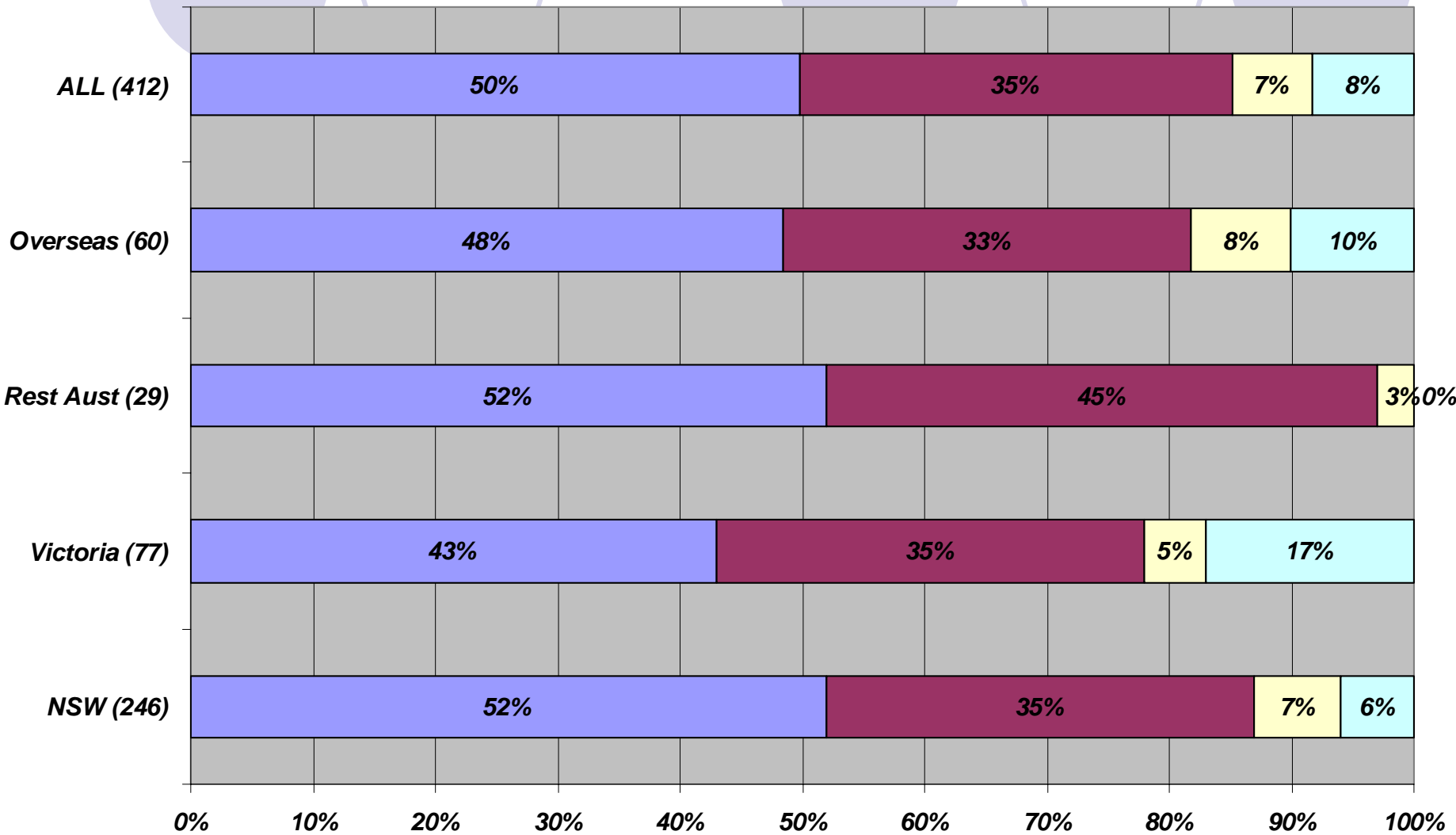
LST DISTRIBUTION BY EDUCATIONAL ROUTE

Converger Assimilator Diverger Accommodator



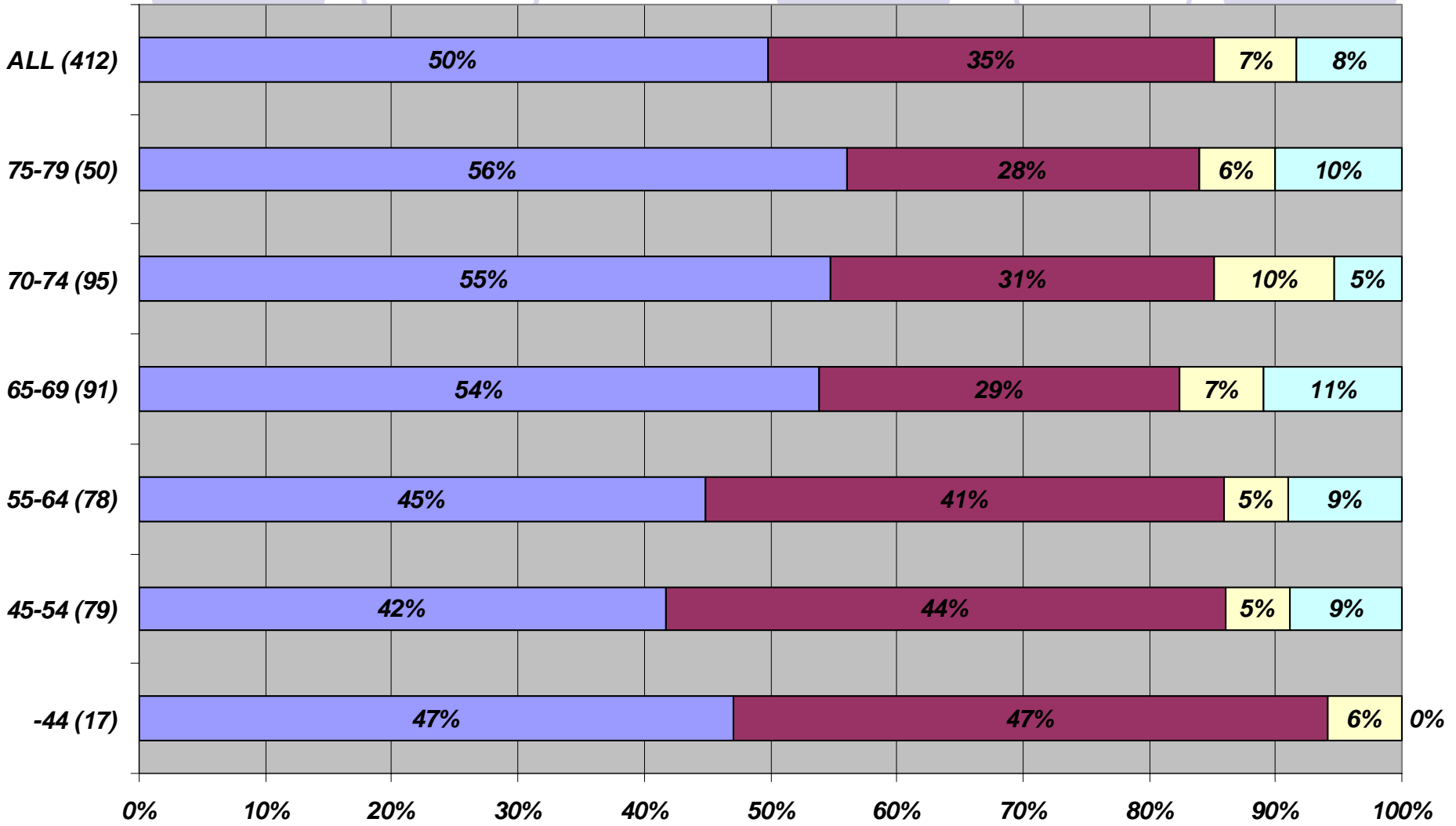
LST DISTRIBUTION BY RESIDENCE

Converger Assimilator Diverger Accommodator



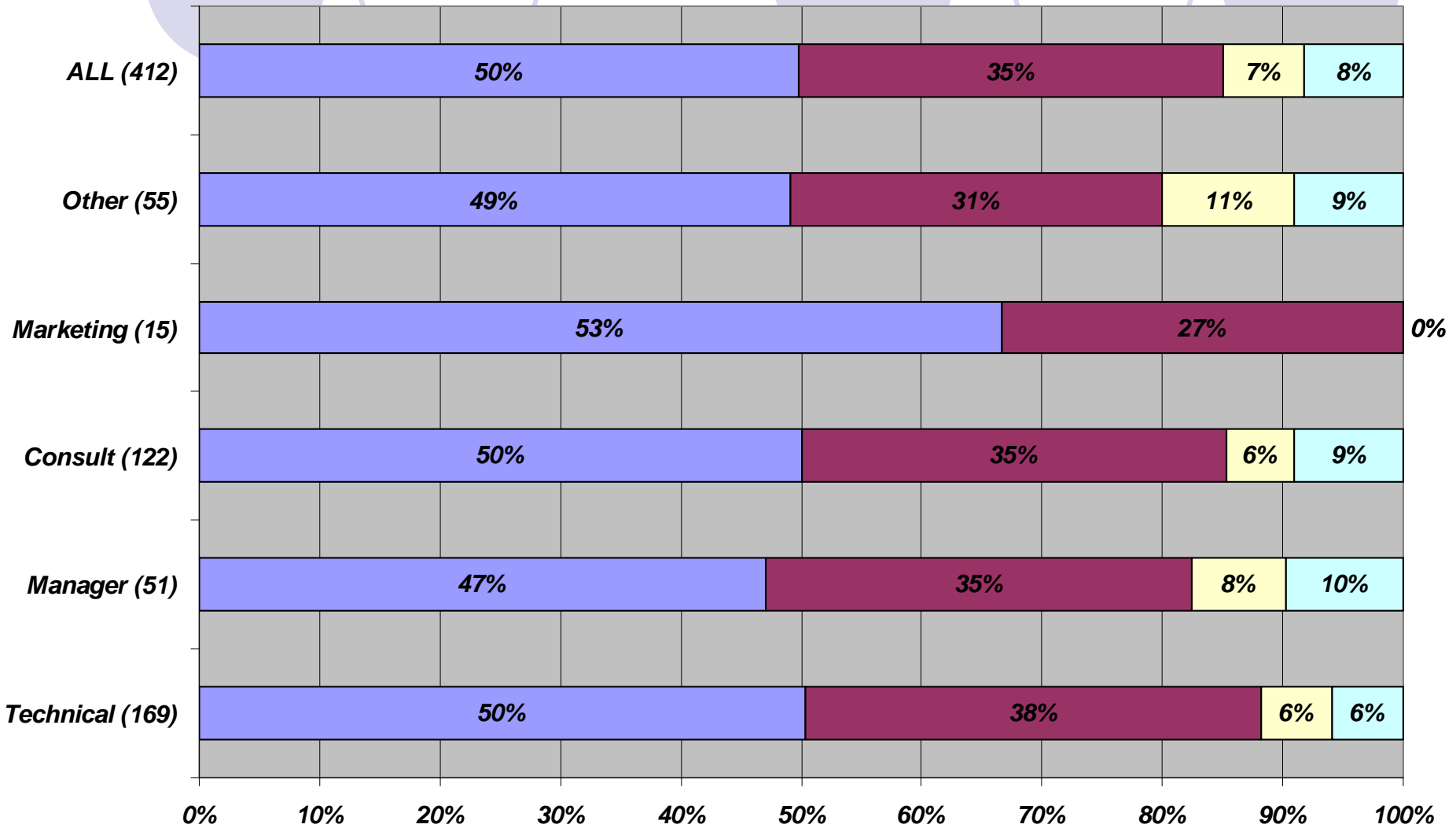
LST DISTRIBUTION BY YOB

Converger Assimilator Diverger Accommodator



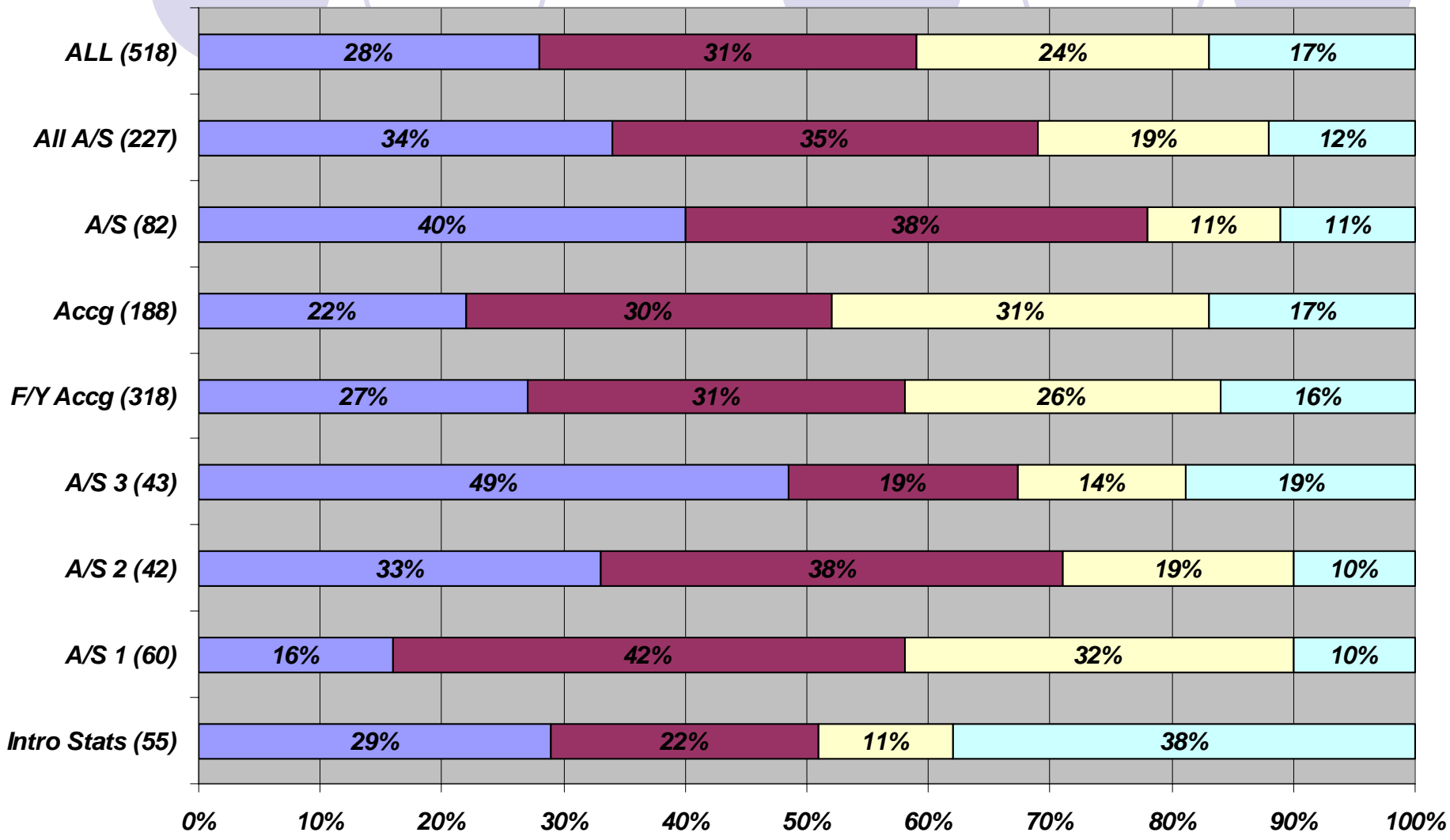
LST DISTRIBUTION BY JOB FUNCTION

Converger Assimilator Diverger Accommodator



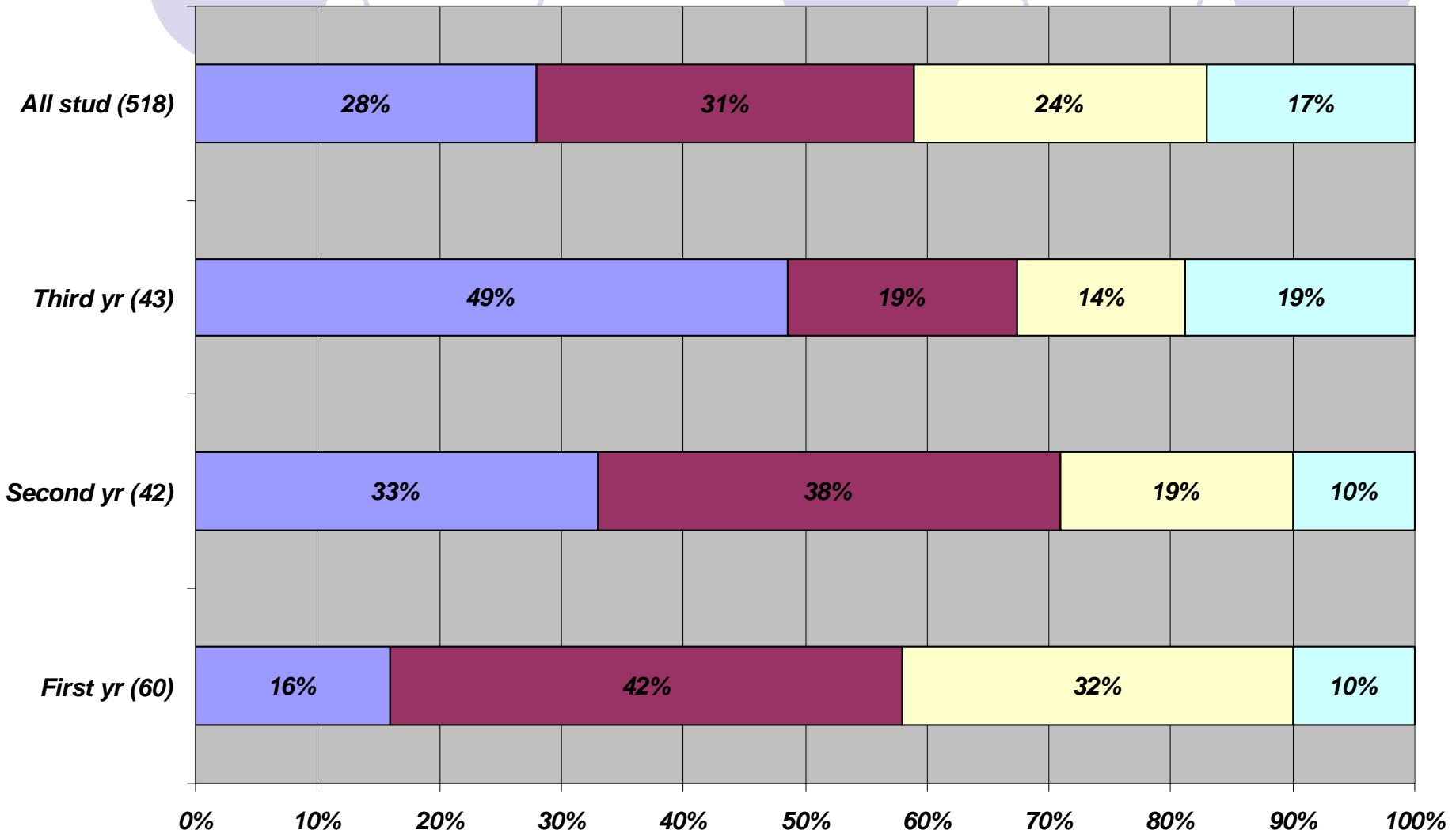
LST DISTRIBUTION FOR MACQ UNI STUDENTS (1995-96)

■ **Converger**
 ■ **Assimilator**
 ■ **Diverger**
 ■ **Accommodator**

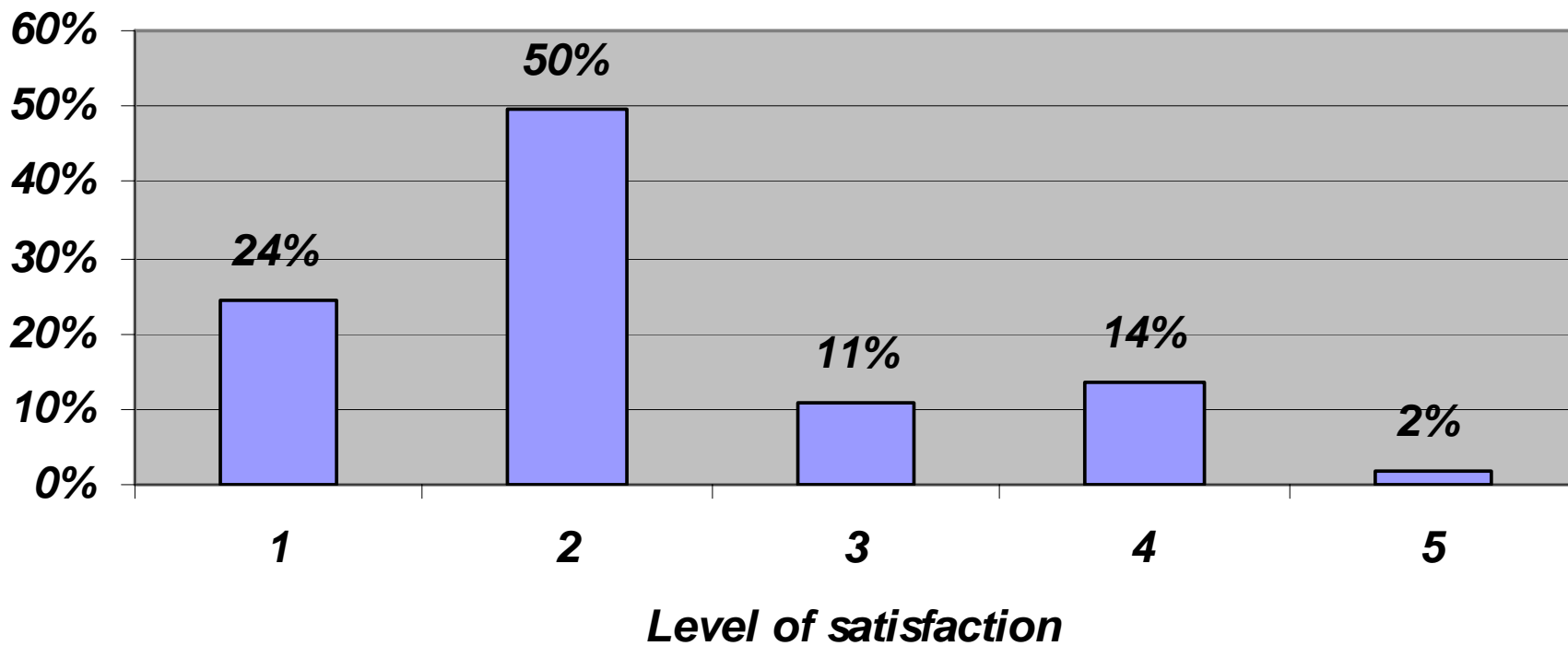


LST DISTRIBUTION OF MACQ UNI ACTUARIAL STUDENTS (1995-96)

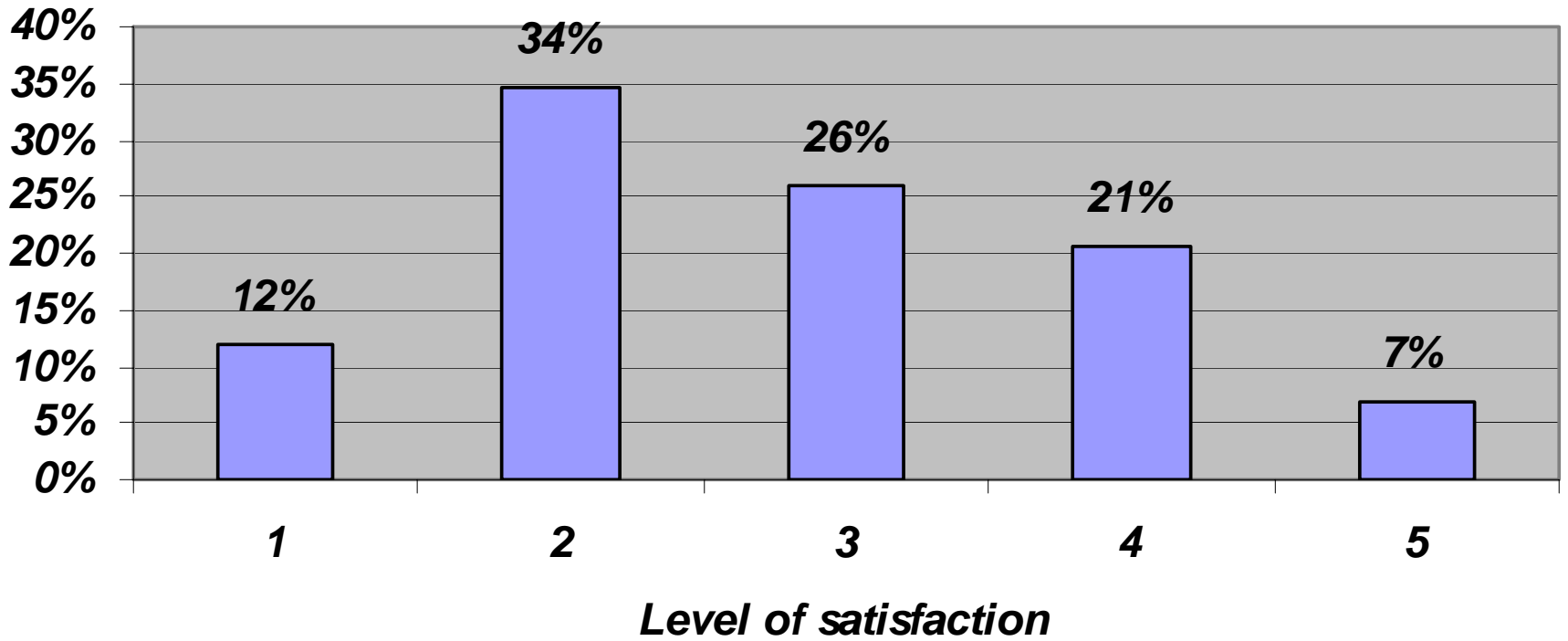
■ **Converger** ■ **Assimilator** ■ **Diverger** ■ **Accommodator**



SATISFACTION WITH CURRENT WORK: ALL



SATISFACTION WITH CURRENT WORK (Students)



LST DISTRIBUTION OF SATISFACTION GROUPS

Converger Assimilator Diverger Accommodator

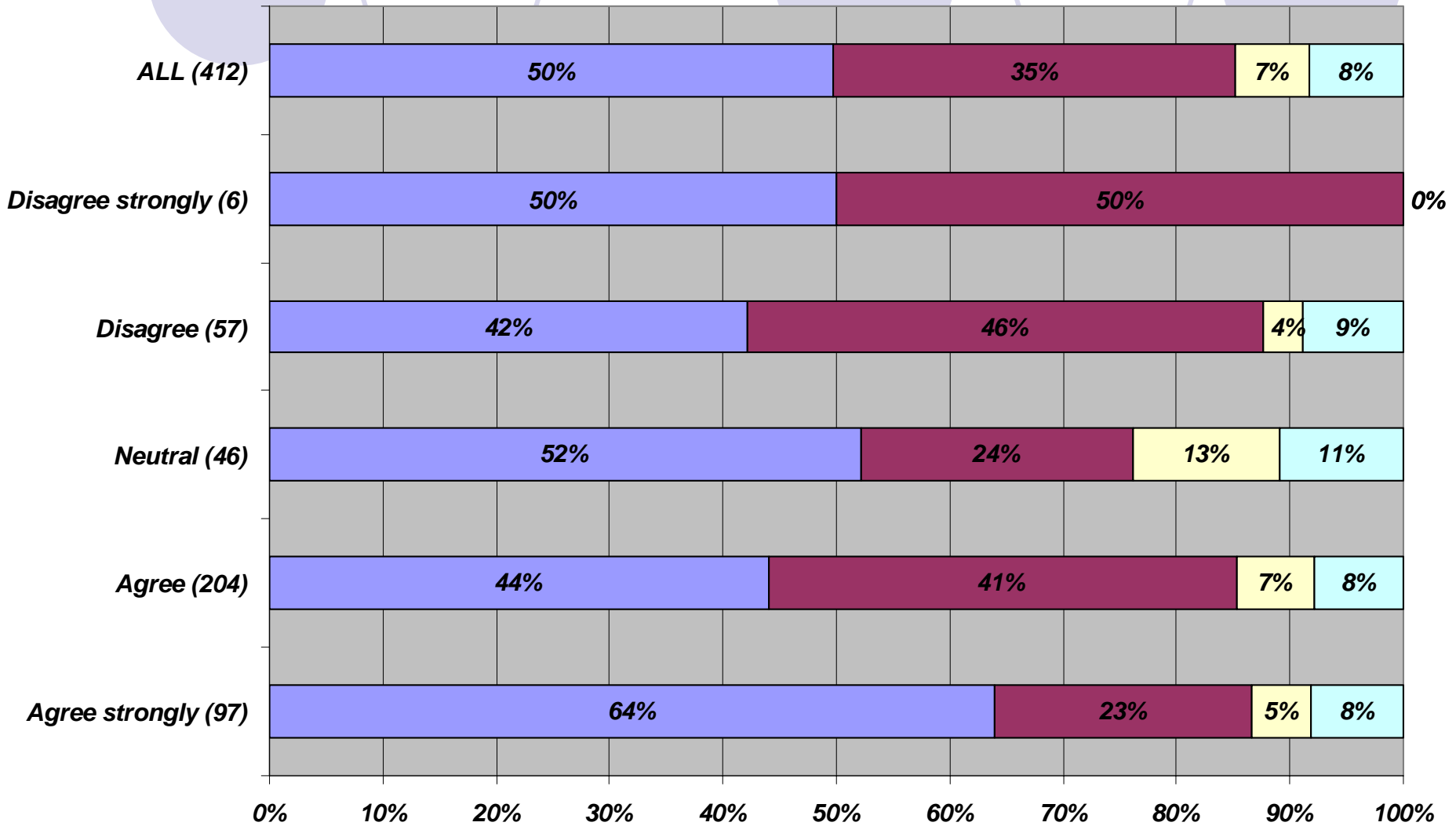
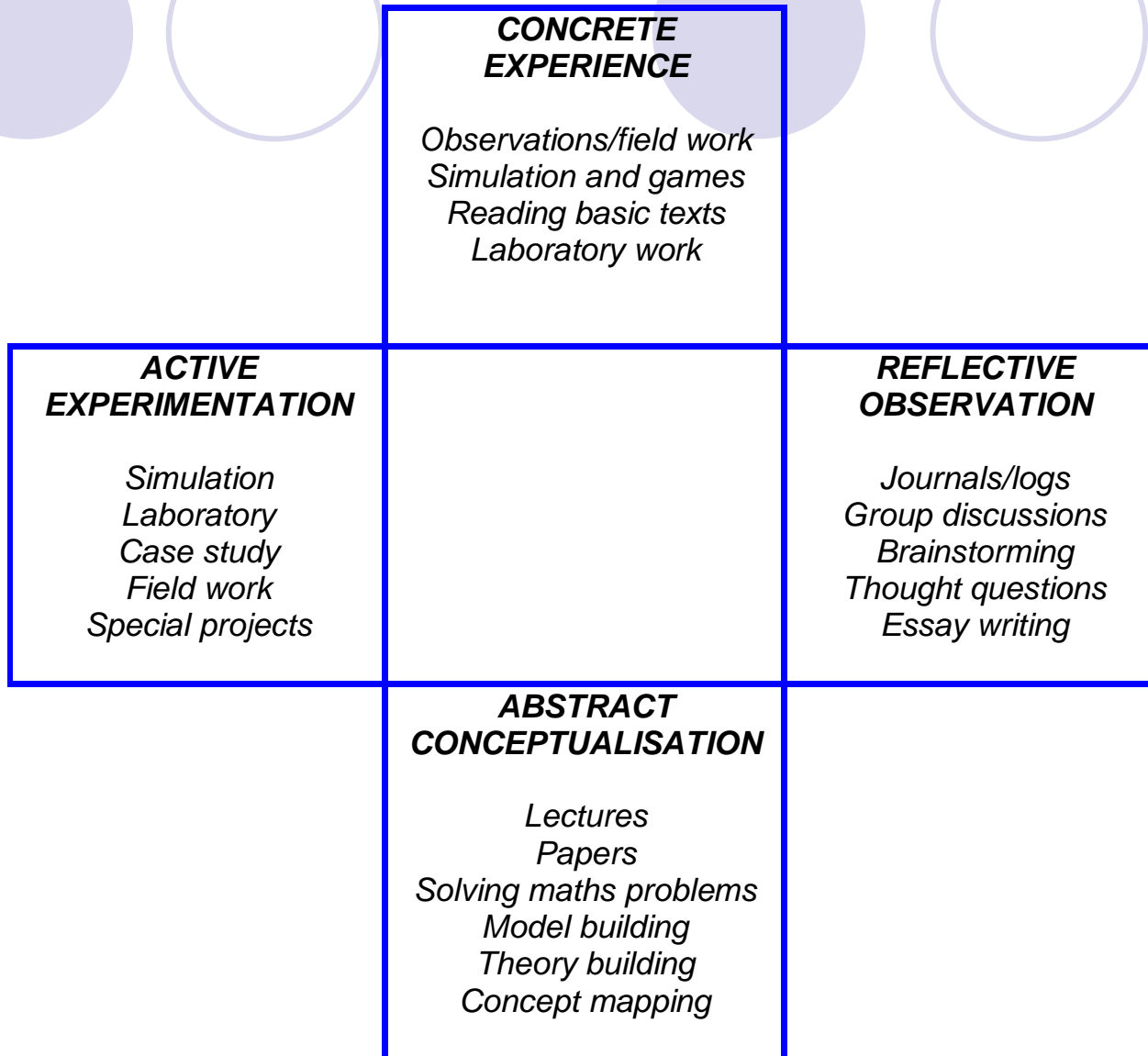


Figure: Instructional activities supporting experiential learning

Adapted from Wynd and Bozman (1996)



Tentative conclusions

- *Whole profession: There is scope for greater diversity of membership in IAAust, at least in terms of preferred learning style*
- *Individual actuaries: There is a need to allow, through the education process, individual actuaries to develop ALL their learning abilities*
- *Part 1 could allow scope for a greater variety of learning activities, if it were not so overcrowded with content*