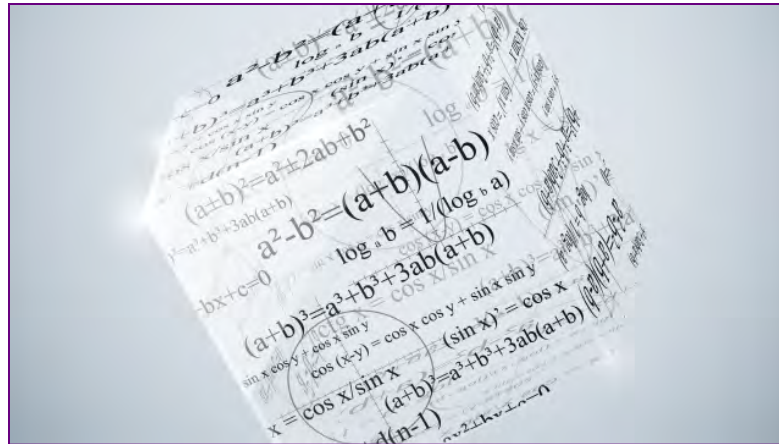


‘I CAN’T DO MATHS’: SCAFFOLDING THE LEARNING EXPERIENCE TO SUPPORT A DIVERSE RANGE OF STUDENTS.



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SESSION PLAN

- Context;
- Philosophy;
- Challenges and opportunities;
- Actions;
- Outcomes;
- Where we are now;
- The Future;
- Demo;
- Discussion.



CONTEXT



- Compulsory introductory statistics module for Middlesex University students on Business programmes;
- Widening access institution;
- Large teaching team with geographically remote partners;
- Extensive international teaching portfolio.



Widening access



Increased student numbers



Greater diversity in group



Multiple runs



University International Development



Increased number of international links
and campuses



Multiple overseas runs and large
international teaching team



TEACHING PHILOSOPHY

- Supporting students who lack confidence and have a fear of mathematics and statistics;
- Providing an enjoyable but useful learning experience which requires active engagement;
- Demonstrating the applicability of statistics;
- Utilise a range of teaching methods and assessments with clear learning outcomes;

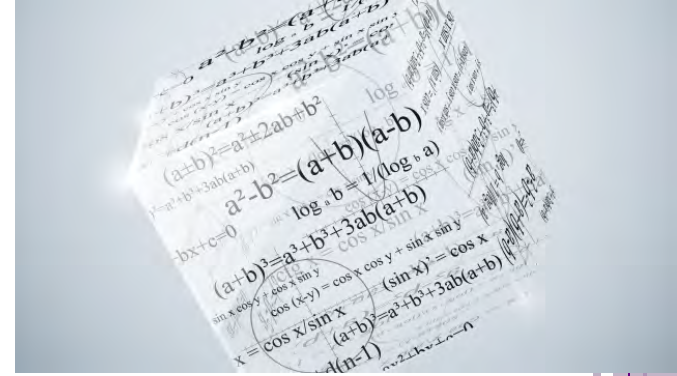


TEACHING PHILOSOPHY

- Empowering students to identify and rectify their own weaknesses by using assessment, both formative and summative as an integral part of the learning process supported by self-paced learning materials;
- Providing timely informative feedback on the students' progress and encouraging students to take responsibility for their own progress.



CHALLENGE: I CAN'T DO MATHS



- Students unable to engage with learning experience due to calculation obstacle;
- Fear of equations;
- Text books assumed an inappropriate level of confidence with maths;
- Disconnect: Teaching team was focussing on why, the students focussing on how.



ACTIONS



- Staff training in design and production of self paced learning materials;
- Designed learning material to focus on mastering calculations;
- Transformed student contact sessions;
- Introduced dedicated advice sessions.



OUTCOMES

- Increased pass rates;
- Higher rate of engagement;
- Increased take up of Statistics optional modules at higher levels;
- Increased levels of attainment;
- Dynamic relationship between staff and students.



CHALLENGE: NOBODY KNOWS WHO I AM

- Due to rapid expansion students felt anonymous;
- Identified need for additional learning support;
- Students gravitating to lecturing staff;
- Student mobbing;
- Dynamic relationship strained;
- Large teaching team.



ACTIONS

- Developed a module communication strategy;
- Developed a clear staffing strategy;
- Prioritised equality of learning experience;
- Developed lesson plans and guidance for tutors for all sessions;



ACTIONS

- Introduced a set of common resources;
- Clarified aim, purpose of and learning outcomes for, sessions and how the learning experiences connected;
- Agreed a set of expectations of engagement for staff and students.



OUTCOMES

- High pass rates maintained;
- Increased levels of attainment;
- Clarity for students of expectation;
- Good relationship between staff and students;
- Standardisation of sessions.



OPPORTUNITY: VLE

- Interactive resources;
- Self paced learning opportunity for students;
- Clarify link between materials and sessions;
- Facility for scaffolding the learning;
 - Formative assessment with immediate feedback;
 - Managing student work load and supporting time management.
- Online lectures.



ACTIONS

- Developed a structure to support student learning;
- Designed interactive module notes with progress checks;
- Introduced online quizzes and activities that were specifically designed to diagnose weakness or misunderstanding;



ACTIONS

- Designed online activities to provide prompt, constructive feedback to students;
- Used selective release for activities and solutions to prompt sustained engagement;
- Utilised discussion board, calendar and announcements as communication tools.



OUTCOMES

- Richer learning environment for students;
- Improved speed of feedback given to students;
- Easier and quicker feedback gathering mechanisms;
- Improved communication with students;
- Increased sense of ownership of learning by students;



OUTCOMES

- Improved and sustained motivation of students;
- Increased sense of student community of students supporting each others learning;
- Improved monitoring and tracking of student activity and engagement;
- Improved integration of international tutors.



CHALLENGE: A STEP TOO FAR?

- Feedback from seminar tutors indicated they felt too constrained;
- How do we get the right balance between equality of experience and academic freedom;
- Seminars not challenging the more able students;
- Pitching to the middle: most able and weakest students required additional material to engage them.



ACTIONS

- Designed and developed a variety of extension materials;
- Structured materials to have a common core and pick and mix extension to suit staff and student needs;
- Shared responsibility for the module and fostered a truly team approach comprising of academic, learning resources and student support staff;
- Assigning module roles to a variety of staff.



OUTCOMES

- Increased levels of attainment for all students;
- Increased level of staff satisfaction and ownership of material;
- Module development team was formed.



CHALLENGE: BUT I CAN'T DO MATHS

- Student numbers dropping at the advice centre;
- The nature of requests was changing;
- Students would approach when several of them didn't understand;
- No further improvement made to pass rate;



CHALLENGE: BUT I CAN'T DO MATHS

- Consultation with students revealed that;
 - The majority found the structured support met their needs;
 - There was a minority who still felt that 'I can't do maths' and felt embarrassed and isolated;
 - Some students were 'Slipping away'.



ACTION:

- Peer Assisted Learning was adopted to introduce the student voice and add variety to the learning support for students;
- SLAs (Student Learning Assistants) made visible and 'familiar' to students:
 - at induction, in lectures, seminars and lab sessions;
 - Spoke at the start of lectures;
 - assisted in lectures with in-class exercises.

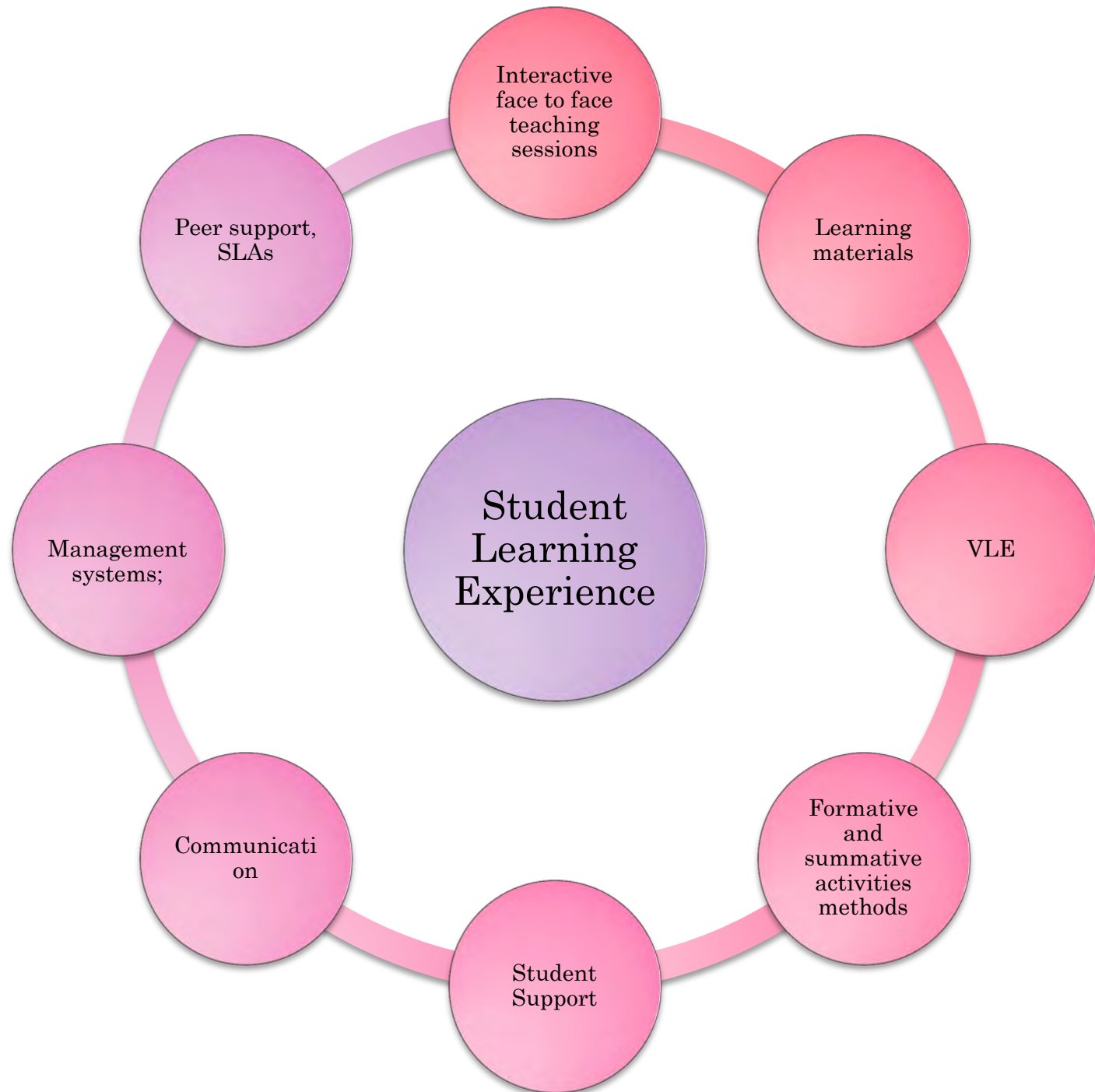


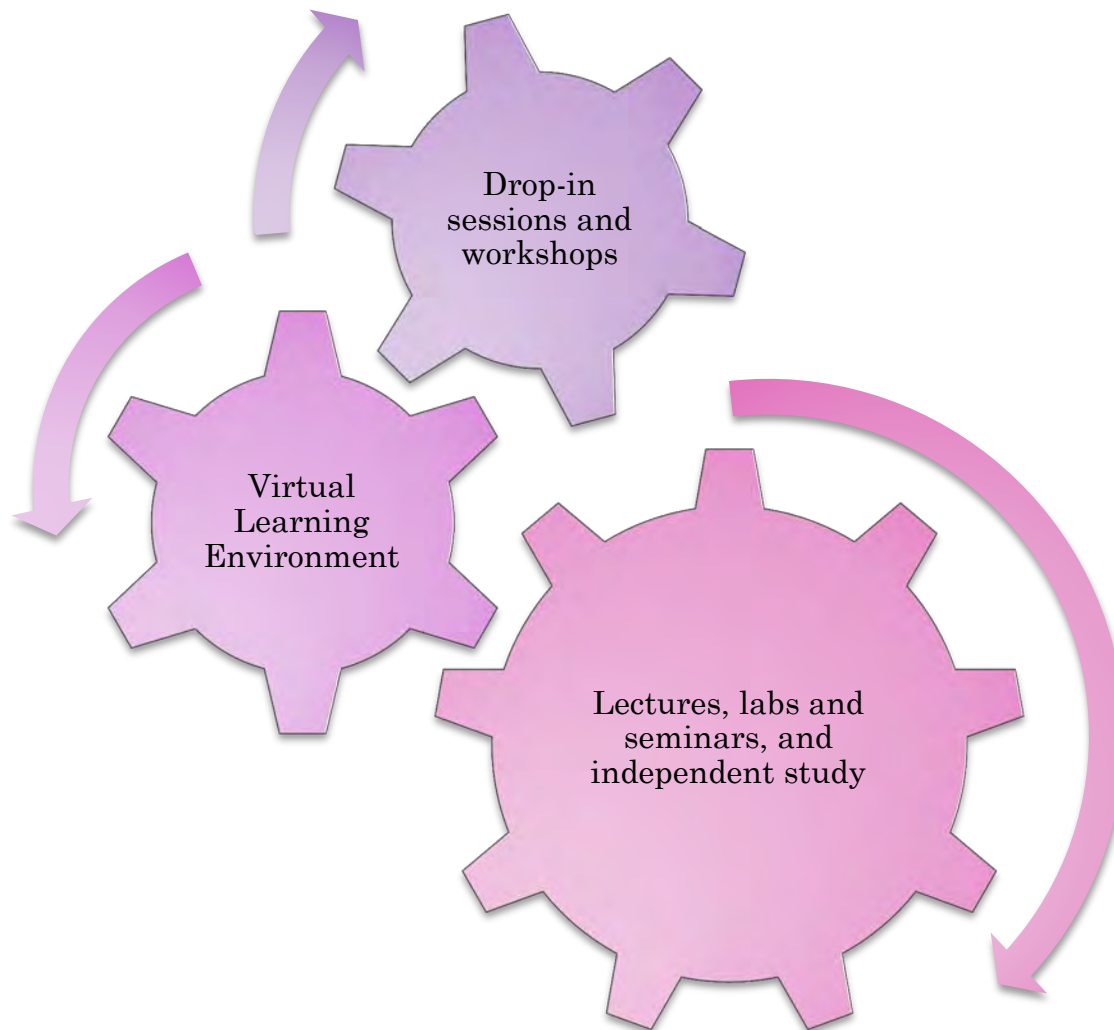


OUTCOMES

- Increase in pass rates;
- Higher levels of attainment observed;
- SLAs were noted as good practice;
- Use of SLAs increased and adopted in other areas;
- Students recognised SLAs as role models;
- One-to-one support provided by SLAs was praised.







FUTURE

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