Managed Learning Environments - Some Additional Issues

Lack of connection between MIS and VLE staff is a common issue early on in MLE implementation – this often results in either side making uninformed assumptions about data entities, sources and flows that are later found to be flawed, or forthcoming external or internal changes (commonly to the business systems) that do not take into account the 'receiving' systems in terms of timely notification or consulting. This is becoming increasingly recognised and addressed. Design is often primarily based on technical specifications of data field types, linkages and protocols, with emerging technical standards significantly easing this task. However, additional issues relating to the data itself and the processes by which it is gathered can equally affect the perception of end-users.

For students, much of what was once seen as 'purely' administrative data has increased in visibility as it is shared with other systems. Where previously a student may have seen an enrolment form pre-printed with their 'known' data annually, which they manually annotated and expected the data to be updated on the admin system – a 'sporadic' view of the data – now elements of this may be constantly accessible via applications such as a VLE or a library system. The causal relationship between systems means that the student's perception of their customer experience – whether from a VLE, a library system or a portal – is not just about the system they are accessing but is affected by the quality and timeliness of data coming from other systems which may previously have been hidden to them. A student's lack of confidence in these systems resulting from the visibility of incorrect data could have an effect on their ability to learn.

Processes, Data Sources and Flows – some examples

Area	Potential issues/problems	Potential MLE issues
Data sources and input method	Variety of sources and input - electronic transfer, from external (third party – e.g. UCAS) or internal system, manually entered, scanned – e.g. OMR or OCR. Data received from third parties often assumed correct but can still be erroneous or has been collected on a different basis/for a different purpose.	Data may be incorrect in context – e.g. student's legal name rather than preferred name may be visible as a throughput from a third party rather than a local administrative entry.
Timing of data arrival and processing Data dependencies	Timing is crucial but may be subject to many variants: • External constraints – e.g. transmission of some UCAS elements relate to rules about applicant status • Variations in timing depending on the category of student (undergrad/postgrad, full/part-time, home/international) and/or calendar (September starts/February starts) • 'On the ground' reality overtakes the theoretical process e.g. applications to a course yet to be validated and without final unit structure approved • Internal systems reliant on external data feeds default values in whilst awaiting third party data, or waits for third party data (either for individual records or for transmission of a full dataset), or updates data as it is received from external sources	Expectation is that correct name, course, units etc will be visible to the student on initial login. Many of the admin and external constraints listed work against this; in particular the timings often vary from student to student or cohort to cohort for the reasons listed. Consider students on the same unit entering via different courses and methods – UCAS entry, direct PG FT entry, direct 'off the street' PT entry. The unit may or may not be a 'core' and thus 'already known' element of the course, or a 'pre-booked' option, or a last-minute 'elective'…how reasonable is it to expect that all students for that unit may be registered at one and the same time?

Data meaning and definition Data transformation	Data values/meanings are not always simply transferred, they may be mapped or aggregated in some way, changing context or increasing the likelihood of error. Differing audiences may differently interpret data meaning. e.g. A student's view of their course may differ to the way in which the institution holds the data – often held in a way best suited to admin/external statutory/quality requirements but may be differently aggregated to the customer's expected view	Data transformation across process and systems can prove confusing – e.g. new students who may be used to UCAS course codes and titles may be suddenly presented with differing internal coding and possibly even title variants
Data confidence level	Data may not be a finalised value – it may be provisional or interim (e.g. student fee assessment from Student Loans Company).	Data classed as 'provisional' on the business systems might be misconstrued as final if appropriate controls are not in place or caveats not stated – e.g. student marks
Process location, ownership and sequence	There may be external constraints forcing location, ownership or flow sequence. e.g. admissions confirmations sequence subject to UCAS operation. These flows may be sub-optimal within the institution, but there may be few or no opportunities for process re-design/ streamlining.	Immovable external constraints may work detrimentally against the 'internal' visibility of the data in terms of timing, meaning etc.

Reviewing processes could alleviate some of the issues above as well as improving business efficiency

Also worth mentioning are:

Area	Issue/consideration
Training	Administrative staff who may or may not be users of the VLE need to be aware of data flows and implications for timing/sequencing for receiving systems; there is a need for continual update of this as requirements change; conversely academic and students need to be aware of where the data initiates from, why and to what timescale. Sustainability is an issue - staff development is not a one-off and to exacerbate this staff may need cross-training/awareness-raising.
Technical maintenance and upgrade	Downtime for one or more 'feeder' systems can have major implications for other systems – can lead to a push for 'go it alone' intervention on receiving systems and more than 'one source of truth'; different stakeholders may have differing opinion about upgrade cycles and priorities. Need to consider and allow for consequences of downtime of 'feeder' systems on data accuracy/currency
Embedding	Culture change – removal of data 'boundaries' or 'silos', requirement for cross-functional awareness, planning, timing and cost.