

SHEILA analytics Policy Framework v.1

This policy draft is based on the analysis of institutional interviews (n=64) using the ROMA framework. Four key elements are included in this policy framework, including action, challenges, and policy.

- **Action:** strategic action points to take in each step of the ROMA framework.
- **Challenges:** potential challenges that exist in each step of the ROMA framework. These challenges fall in categories that are organised alphabetically – capabilities, culture, infrastructure, management, methodology, ethics, and privacy.
- **Policy:** questions to guide the development of a policy that addresses the listed action points and challenges. These questions fall in categories that are organised alphabetically – data management, evaluation, methodology, policy management, purpose, and stakeholder engagement.

Component 1 – Map political context		
ACTION	CHALLENGES	POLICY
<ul style="list-style-type: none"> • Identify internal and external drivers for learning analytics (e.g., problems to solve). • Consider contextual elements (e.g., institutional size, structure) to identify opportunities for learning analytics. • Identify opportunities to build learning analytics upon existing projects or practice. 	<p><i>Infrastructure</i></p> <ul style="list-style-type: none"> • Existing solutions in the market mainly focus on addressing retention problems. • There is no one-size-fits-all model, even within one institution (different disciplines and learning modes). <p><i>Management</i></p> <ul style="list-style-type: none"> • Learning analytics competes with other institutional priorities. <p><i>Methodology</i></p> <ul style="list-style-type: none"> • Institutions feel pressured to adopt learning analytics even though the needs for it are unclear. • Wrongly assume that learning analytics can provide all answers without having identified a question first (data driven approach). • Learning analytics does not generate new insights into the understanding of learning or teaching. 	<p><i>Purpose</i></p> <ul style="list-style-type: none"> • What are the reasons for adopting learning analytics? • What are the questions to solve with learning analytics?

Component 2 – Identify key stakeholders		
ACTION	CHALLENGES	POLICY
<ul style="list-style-type: none"> Identify primary users of learning analytics (e.g., students, teaching staff, and senior managers). Identify senior management team to gain support (e.g., vice-chancellors, principals, provosts). Identify professional teams (e.g., IT, legal team, strategy team, Student Support, Student Registry, library). Identify academic teams (e.g. Learning & Teaching committee, Digital Learning Committee, research project teams) Identify external partners (e.g., researchers and service providers) Identify internal advocates of learning analytics among members of faculties (bottom-up approach). 	<p><i>Ethics & privacy</i></p> <ul style="list-style-type: none"> Marginalise hard-to-reach students by drawing a distinction between students who opt out and those who opt into a learning analytics service. The choice of opt-out or not opt-in could affect those who choose to opt in regarding the quality of data and services provided. <p><i>Management</i></p> <ul style="list-style-type: none"> Define ownership and responsibilities among diverse professional groups within the university <p><i>Privacy</i></p> <ul style="list-style-type: none"> Data sharing (particularly with third parties) requires a careful check of security issues and breaches of privacy. 	<p><i>Data management</i></p> <ul style="list-style-type: none"> How will consent be obtained? Is there an option to opt-out of any data collection and analysis? Who can access the data? Who owns the data? Will data be included in personally-identifiable formats? Can collected data be edited or deleted upon request? <p><i>Methodology</i></p> <ul style="list-style-type: none"> Whose data will be collected? <p><i>Stakeholder engagement</i></p> <ul style="list-style-type: none"> Who is the policy for? Whose working activities will the policy shape? How will responsibilities be defined for each stakeholder? Will the policy cover those who choose to opt out (or not to opt into) a learning analytics service?
Component 3 – Identify desired behaviour changes		
ACTION	CHALLENGES	POLICY
<ul style="list-style-type: none"> Identify areas where different stakeholders will be supported by learning analytics (macro level – institution, meso level – department/ programme , and micro level – teaching staff or students). Consider responsibilities and implications for all stakeholders. Consider inadvertent consequences. 	<p><i>Capabilities</i></p> <ul style="list-style-type: none"> Immature skills of interpreting data lead to wrong decisions. <p><i>Ethics & privacy</i></p> <ul style="list-style-type: none"> People mistrust the result of an analysis if the process is not transparent or if the analytical model is too complicated to understand. 	<p><i>Methodology</i></p> <ul style="list-style-type: none"> How will transparency be achieved throughout a project cycle? <p><i>Purpose</i></p> <ul style="list-style-type: none"> What changes will learning analytics bring to the current situation? Why are these changes important to us?

<ul style="list-style-type: none"> Identify expected 'changes' to the current context. 	<ul style="list-style-type: none"> Unethical profiling of students may occur when selecting those that are more likely to succeed. <p><i>Management</i></p> <ul style="list-style-type: none"> Students may be prone to choose subjects where they are likely to perform well. Users may game a LA system. Those who need support may not necessarily make use of information from learning analytics. <p><i>Methodology</i></p> <ul style="list-style-type: none"> An experimental approach is susceptible to a sense of uncertainty in delivering the expected changes. 	<p><i>Stakeholder engagement</i></p> <ul style="list-style-type: none"> What are the mechanisms to deal with inadvertent consequences? Who will benefit from learning analytics? How will the purpose of learning analytics be communicated to primary users?
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Component 4 – Develop engagement strategy (*tends to iterate with step 5)

ACTION	CHALLENGES	POLICY
<ul style="list-style-type: none"> Consult relevant policies and codes of practice (e.g., Jisc's Code of Practice for Learning Analytics, and data protection policies) Align learning analytics with the wider institutional strategies or introduce learning analytics into the university's strategy. Seek funding. Appoint specialists to lead learning analytics projects. Establish a working group and define a clear leadership structure. Consider establishing an ethics commission. Raise awareness through publicity and meetings/ workshops/ conferences. Establish 	<p><i>Ethics & privacy</i></p> <ul style="list-style-type: none"> Learning analytics may induce fear and discomfort about surveillance. Existing data protection regulations could restrict the way learning analytics is operated. It is arguable to base predictive models on pre-determined factors, such as demographic characteristics. Predictive models may result in unequal access to learning or support resources among students. Focus on students with a specific profile (e.g., struggling students, drop out risks) and ignore others. <p><i>Management</i></p>	<p><i>Methodology</i></p> <ul style="list-style-type: none"> What kinds of data will be collected to achieve these objectives? What is the scope of data collection? What kinds of data will be presented? How? To whom? How should data be interpreted? Who will be involved in this process? How will resources be distributed efficiently and fairly as a result of the analysis of data? Will there be interventions based on analytics? Who will decide the interventions? How will interventions take place?

<p>communication channels between different stakeholders across the institution.</p> <ul style="list-style-type: none"> • Consider phases of implementation (e.g., explore data, carry out pilot projects, seek feedback from users, and develop a policy for the adoption of learning analytics). • Decide the scope of the project – the range of data. • Choose analytical models and define metrics. • Consider the best ways to present analytics results (e.g., visualisation). • Select data that will be fed back to different stakeholders. • Provide training for users. • Consider providing a safe environment (e.g., a sandbox) for testing or research purposes. • Decide forms of interventions (e.g., automatic systems, personal contacts, learning resources). • Engage with research projects locally or through collaboration with other institutions. 	<ul style="list-style-type: none"> • Overloading primary users with too many e-mails about analytics results. • Strict data protection laws could hamper the adoption of learning analytics. <p><i>Methodology</i></p> <ul style="list-style-type: none"> • Over rely on data and fail to consider the experience and knowledge of instructor/ tutors about students. • Leaving feedback loop unclosed (no follow-up support) leaves students in anxiety and potentially demotivates them. • Focus on identifying students at risk and overlook the pedagogical design of curriculum or learning support. • Peer comparison may demotivate students. • Unsuccessful students may be discouraged by warning messages. 	<ul style="list-style-type: none"> • Who will be affected by the interventions? • Who will oversee ethical conducts related to learning analytics? <p><i>Purpose</i></p> <ul style="list-style-type: none"> • What are the objectives for learning analytics? How do they align with the institution’s vision for education? • Will learning analytics be used as a management tool to monitor students as well as staff? • Will learning analytics be used as a deficit model targeted at supporting students at risk of failure?
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Component 5 – Analyse internal capacity to effect change

ACTION	CHALLENGES	POLICY
<ul style="list-style-type: none"> • Evaluate risks. • Evaluate technological infrastructure. • Establish indicators of data quality and system efficacy • Evaluate human capacity (e.g., data literacy, relevant expertise, staff workload, opportunities for skill transfer). 	<p><i>Capabilities</i></p> <ul style="list-style-type: none"> • The maturity of data literacy varies among stakeholders and faculties. • The lack of critical self-reflection skills reduces the chance to benefit from learning analytics. 	<p><i>Data management</i></p> <ul style="list-style-type: none"> • How will the data be stored and disposed? • How often will the efficiency and security of existing data infrastructure be evaluated? <p><i>Methodology</i></p>

<ul style="list-style-type: none"> • Evaluate financial capacity. • Evaluate existing legal framework and its applicability for learning analytics. • Evaluate institutional culture (e.g., trust in data and openness to changes and innovation). • Evaluate resources available for primary users to uptake learning analytics (e.g., ownership of mobile devices) 	<ul style="list-style-type: none"> • The understanding/ interpretation of data protection regulations vary among legal officers, researchers, and teaching staff. • Digital capabilities affect the desire to opt into a learning analytics service. • Limited awareness or discussion regarding privacy and ethical issues cripple the adoption of learning analytics when issues arise. <p><i>Culture</i></p> <ul style="list-style-type: none"> • Institution-wide buy-in is hard to reach. • Instructors are more interested in establishing a research profile than enhancing teaching and learning. • Senior managers are more interested in financial benefits to the institution than the benefits in enhancing learning and teaching. • There is unequal engagement/ interest in learning analytics among primary users (e.g., differences in gender, age, and disciplines influence the degree of interest). • There is no common understanding of learning analytics among stakeholders at different levels (e.g., managers, teaching staff, IT officers, and students). • Concerns about data protection hinder buy-in. • Reluctance to change is present among some teaching staff (e.g., try new or unfamiliar technologies, or change teaching styles). • Training could be difficult to deliver when staff lack time. <p><i>Infrastructure</i></p> <ul style="list-style-type: none"> • Some useful data remains inaccessible. 	<ul style="list-style-type: none"> • How will data integrity be achieved? • Is there an application procedure for using learning analytics for research or teaching purposes? Are the procedures different? <p><i>Policy management</i></p> <ul style="list-style-type: none"> • Are there related policies in the university that the policy sits alongside/above/below? • Are there any national/international policies that this policy has to adhere to? • What mechanisms will be used to communicate the policy effectively to stakeholders? <p><i>Stakeholder engagement</i></p> <ul style="list-style-type: none"> • What training will be deployed to scale up data literacy and incorporate learning analytics into daily practice? Will the training be compulsory for any stakeholder? • What communication channels or feedback mechanisms will be in place? • Will learning analytics exclude certain groups of students? Will there be mechanisms to address inequality? • How will the current policy be communicated to different stakeholders?
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	<ul style="list-style-type: none"> • Data is held in silos. • Data is fragmented. • Data is noisy. • Setting up a learning analytics environment is costly. <p><i>Management</i></p> <ul style="list-style-type: none"> • 2018 GDPR requires changes in existing practice and system (e.g., coping with individual opt-outs). • Central steering groups and individual project groups do not coordinate. • Engaging students with institutional policies in an informed way. 	
Component 6 – Establish monitoring and learning frameworks		
ACTION	CHALLENGES	POLICY
<ul style="list-style-type: none"> • Set up measurable milestones. • Establish qualitative and quantitative indicators of success. • Seek feedback from primary users through various channels. • Develop methods to triangulate analytics results. 	<p><i>Culture</i></p> <ul style="list-style-type: none"> • Low participation of primary stakeholders in top-down consultations (e.g., survey and meetings). <p><i>Management</i></p> <ul style="list-style-type: none"> • Manage expectations (e.g., deliverables and impact). <p><i>Methodology</i></p> <ul style="list-style-type: none"> • It could be hard to isolate learning analytics from parallel projects that support the same goals (e.g., enhance learning and teaching) when measuring success. • Fail to recognise and address limitations of data and analytics models (e.g., uncapturable factors of learning, ineffective metrics, existing bias, inaccuracy of predictions). • Overly depend on data that is conveniently available to justify a learning phenomenon. 	<p><i>Evaluation</i></p> <ul style="list-style-type: none"> • What defines success or failure? How will success be measured? What are success indicators? • When will evaluation take place? • Who will carry out the evaluation of impact? • How will the utmost rigour and validity in data be achieved? • What are the limitations of learning analytics? <p><i>Policy management</i></p> <ul style="list-style-type: none"> • How often will the policy be reviewed and updated? • Who will be responsible for the policy?

	<ul style="list-style-type: none">• Fail to contextualise data.• Wrongly assume causal relationship between certain learning outcomes and interventions.• Interventions introduced to one course may have negative impact on student engagement in another course.• Emphasise measuring output (learning or teaching performance) and overlook developing input (e.g., strategies, skill development)	
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