Output 14

Policy recommendations for integrating data, learning analytics and the advice-giving process

Policy recommendations are aimed more at managers and university leaders. The impact will be advice for leaders considering how to embed learning analytics therefore enabling them to make more informed decisions more quickly. This document is accompanied by a practical guide for staff working with learning analytics in which the challenges of actually mapping and using institutional data are explained (output 15) as well as an overview of advice for warm referrals for supporting students at risk (Output 13).

Recommendations for institutions (how institutions ought to shape their prompts communications and support by using the institutional data available to them - 014). This includes **guidance about institutional policy** and where appropriate:

- appropriate 'systemic change associated with developing the institutions capacity to exploit the information learning analytics provides' (p46)
- 'how to embed learning analytics and advising interviews into the policy framework of their institutions, therefore enabling them to make more informed decisions more quickly' (p47)
- Advice on consulting students and staff (p40)
- Recommendations about the GDPR or other legal/ethical requirements (p40)
- if/whether educational disparities can be reduced through use of digital technologies (p47)

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1. Purpose of having policy

"A policy is a set of rules and guidelines for an organisation and it's employers to achieve goals" [https://www.kirkpatrickprice.com/blog/the-purpose-of-policies-procedures/]. Policy, accompanied with procedures provide a roadmap for day-to-day operations [https://www.powerdms.com/policy-learning-center/following-policies-and-procedures-and-why-its-important]. They support staff in framing their work according to an agreed set of standards. Policy and its subsequent procedures provide clarity about institution's intention or mission, they ensure compliance with laws and regulations, they give guidance for decision-making and help employers to prioritise competing demands. Overall, adherence to policy and procedures will streamline internal processes. This report is meant for managers and university leaders and summarizes policy recommendations for the use of learning analytics. We would like to stress that any learning analytics policy will need to fit within an already existing framework of policy. The following are likely to need consideration/ accommodating: retention, student wellbeing, attendance monitoring, tutoring/advising, mitigating circumstances/ appeals, mentoring/ coaching, and data use/ privacy. The recommendations regarding the use of learning analytics are summarised in an infographic (see next page). Each recommendation is described in more detail in the subsequent section supported by evidence from different outputs in the Onwards from Learning Analytics project. After each recommendation a list with bullet points provide additional information and references to original documents.

2. Schematic overview of policy recommendations

Policy recommendations

Integrating data/learning analytics and the advice-giving process

OFLA — Onwards from Learning Analytics

Link to existing policy or mission
- Specifically link to policy for support
- Use policy at departmental level if no overall policy exists
- Policy must justify and guide the use of data

Define target students
- Can be different subgroups with different goals
- Use data directly in case work or use aggregated data for research & managerial purposes

Involve stakeholders in policy & process

Staff
- On validity of alerts, on communication with students, on action, on usage

Students
- On relevance, on buy-in, on usage

Ensure faculty understand data & have advising, supporting skills
- Data literacy required
- Skills for advising/tutoring preferable
- Knowing the referral process is essential

Be transparent
- Make processes public
- Set rules for data use
- Be clear on data limitations
- Comply to GDPR

Focus on dynamic data
- Dynamic data is recent, behavioural & actionable
- Avoid unique focus on static data, such as demographics, which students can not change

Include post data processes
- Describe decisions made & outcomes gained
- Set rules for record keeping
- Appoint staff to correct incorrect data and notes

Shape policy aware of technical capacity
- Be aware of technical opportunities and (current) limitations
- Involve IT personnel early in development of LA systems

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3. Suggestion to ensure appropriate use of learning analytics

3.1 Link policy regarding the use of data and learning analytics to existing institutional policy or mission.

The use of learning analytics data should be directly linked to the policy for support. By integrating these components, a single policy is shaped with a clear focus on student support. This overall policy can be at departmental or institutional level. The aim of this policy is to have a written document in which the use of data is justified. Policy should provide clear guidelines for the use of data.

- The use of learning analytics should be connected to the institution's vision and goals. The choice of what data to collect and how to translate this into interventions should be linked to the strategy of the organization. *[O4 advice 1]*
- Therefore, we recommend to not include the hints and tips in the initial communication, but to keep them available and point students to where they can find them, for example after the conversation with the study coach. In this way, the institution offers students time to process the initial communication about their scores, to put them into perspective under the supervision of the study coach, and, together with the advice that comes from that conversation, to turn them into concrete actions. *[Summary 4.4 summary & discussion AHS-O12]*.
- Determine a smart but fair threshold for the identification of students (at risk/ with demonstratable delay/ reduced progress) based on existing policy and procedures *[Recommendations, UMCU O12]*.
- [..] guidelines need to include the amount of information about a student that will be shared between the call team, tutors, and student support services *[Comment and recommendations, 3.3 Clarity about sharing of information, NTU O12 – Calling Service Trial]*.
- Consider how the intervention (call centre) will complement, work alongside, or replace existing structures. What are the restrictions in place as a consequence of what is already in place in the organisation? *[4.2 Recommendations NTU O12 – Calling Service Trial]*
- The alignment of the work of the call centre with existing policies on engagement and attendance where appropriate. *[4.2 Recommendations, NTU O12- Calling Service Trial]*
- In this pilot, the project team did not exclude students already receiving extensive support from Student Support Services. In the subsequent work (O12 NTU Calling Service Trial), the calls were screened by Student Support Services before being contacted, to avoid unnecessary duplication. *[Discussion and recommendations 4.4 Management – NTU O12 Summer Calling campaign]*

3.2 Define target students that data is used for directly, and or data that is aggregated for research purposes.

Student data can be used directly in interventions such as conversations with individual students at risk. Visualisation of lack of progress or attendance, for example, could be the starting point of such conversations. Please note that students can be in different subgroups, when data is collected for different goals. We advise that these subgroups should at least contain social justice and disparities of attainment.

- *Student data can be used directly in case work*
  o For example, individual students at risk of failure or withdrawal. *[report output O6, 2.1]*

- o Actions, be it communication or interventions can be targeted and/or customized. Although effects have been seen on all students, interventions tend to target or prioritize at-risk students or students not doing so well. [*O4 advice 4*]
  - o Without the use of learning analytics, the project team would have had to use more manual processes, less efficient approaches, or potentially less accurate triggers. *[Discussion and recommendations 4.1 Trigger/ Prompt – NTU O12 Summer Calling campaign]*
  - o [..] students in the target group were precisely those students who had often not (yet) formed working relationships with tutors. Furthermore, in Output 9, it was found that that a slightly larger proportion of students who did not have a tutor an unknown tutor generated alerts. *[Discussion and recommendations 4.3 Intervention – NTU O12 Summer Calling campaign]*

- - *Student data is aggregated and used for research and managerial purposes*
  - o Often, 'early' interventions are recommended in view of offering students enough time to change behaviour. [*O4 advice 9*]
  - o A 'Dashboard Alert' (or 'alert') – the learning analytics system generates an email to the students' personal tutor when it registers 14 consecutive days of no engagement *(NTU O6, 2.2.1, 3.1.1).*
  - o 'Mid-term Reviews' – A periodic review of a mix of attendance, engagement, and other student performance data, used to identify 'at-risk' students. This occurs at various points in the year *(NTU O6, 2.2.3).*
  - o The 'FIT-test' – completed by students around the 8-week mark, aiming to measure student experience of higher education, from academic skills to environment and social aspects of university. *(AHS O6, 2)*
  - o Exam results – results of final exams per semester or module, especially the first semester or module. *(AHS O6, 3).*
  - o Provisional study advice – an early notification after 6 months based on the number of credits earned so far, with a forecast of likelihood of passing the year. *(UMCU O6, 2.1)*

3.3 Involve stakeholders in development and implementation of policy and process

Stakeholders should be involved in the development and implementation of policy and processes. These stakeholders are a representation of both students and staff members. Students can provide valuable input on the relevance, on buy-in and usage of the learning analytics data, whereas staff can provide input on the validity of alerts, on the procedures to communicate properly with students, on actions that could or should be taken and on usage of data. Once policy and processes are clear, other staff and students should be well informed about this.

- - *Staff members*
  - o Involve instructors to identify students at risk and set up the communication and allow them the final say about whether to send a message (for example leaving out students in special circumstances like illness. Based on the issue, different types of support staff should be able to contact the student. [*O4 advice 6*]
  - o Involve support staff, i.e. academic counsellor/tutor/mentor, to determine if identified students need additional stimulus (or to exclude them from the intervention to prevent them to get overwhelmed). [*Recommendations, UMCU O12*]
  - o Both counsellors and students are in favour of a and-and-approach, one in which the institution not only relies on data but also adds a personal approach. *[Summary 3.4 automatic notifications AHS-O12].*

- o Even where triggers follow specific agreed criteria, human sense checking is important. The alerts provided a good indication of risk, however, the time of year and presence of the Easter break, meant that other factors needed taking into consideration. *[Recommendations 5.1 Trigger/ prompt– NTU O12 Summer Calling campaign]*

- *Students*
    - o Preferably the communication is personal or customized, or, for the sake of still being workable, should come across as personal or customized. Ways to achieve this include addressing the student by name, sending the communication on behalf of the faculty. [*O4 advice 6*]
    - o Email seems to make the most sense to communicate with students. It is workable and an accustomed method of communication with students. [*O4 advice 8*]

- *Development / updates*
    - o In order to cater to their needs, the end-user should be involved from the beginning and throughout the process. [*O4 advice 2*]
    - o .. input [from students] on experiences of interventions are valuable. [O4 advice 2]
    - o The efforts should be evaluated for improvement. Student and staff appreciation are part of this. *[O4 advice 2]*
    - o Recording actions and subsequent monitoring of the student's progress following the intervention is key in ensuring that the student is no longer deemed as 'at-risk' *[UMCU O6, 2.3). [overview O6 -2.3 support/action, p8.]*

3.4 Ensure faculty understand data & have advising and supporting skills

Faculty should have the ability to correctly interpret data. Therefore, faculty development programs should include data literacy training. It is beneficial if staff has the ability to advise and tutor students themselves. If this is not feasible, staff should at least know how to provide a warm referral to support students.

- *Interpreting data/ data literacy*
    - o It should be noted that where more automated processes and systems are in place, an added issue of data literacy exists, as well as the need for effective change management strategies in order for the systems to be properly introduced *(NTU O6, 3.5.3). [Overview output 6, 3.4 sustainability, P7]*
    - o In order to ensure expectations are met, supporting staff to adapt to the new system and improving data literacy is a key component to success *(NTU O6, 5.4, recommendation 7). [Overview output 6, 3.4 sustainability, P8]*
    - o Data is used to generate and support conversations, mostly at the beginning, to start from factual insights. The data can also boost the quality of the conversation as staff can be better informed. *[O4 advice 10]*
    - o At a final stage, training programmes for staff and students should be implemented. [*O4 advice 2*]

- *Having skills associated with advising/ tutoring, i.e. coaching, listening*
    - o Just presenting the data to students, even with a visually accessible dashboard, does not always suffice. As a result, staff should consider contacting students to encourage, explore, and engage. *[O4, 5. communication]*

- *o* Referral is important for students and particularly effective, especially for students who have psychological needs. *[Summary 5.4 referral, AHS O2]*
- *o* Whilst the volunteer callers all worked face to face in a range of roles, they weren't experts in institutional support systems. This led to some concerns about consistency of advice. Whilst that was dealt with by the initial training and daily debriefs there was a feeling that the service could have been more consistent. *[Discussion and recommendations, NTU O12 – Summer calling campaign]*

- *Knowing how support processes work, including the referral process*
    - *o* Involve instructors to identify students at risk and set up the communication and allow them the final say about whether or not to send a message (for example leaving out students in special circumstances like illness). [*O4 advice 6*]
    - *o* Tips and trick for a warm referral are summarized in an overview *[O13].*

3.5 Be transparent how data is used and make processes public

Being transparent is important. Transparency shows stakeholders and end-users what data is used and how or for what purpose this data is collected. Be clear about the rules that are set for the use of data for example GDPR regulations. We advise to include communication concerning limitations of data and legal requirements.

- *Set rules for data use*
    - *o* its interpretation (even as an integral course activity) for example through mentors or setting up an action plan with support staff. [*O4 advice 4]*
    - *o* The visualization should make the data easy-to-interpret. [*O4 advice 5]*
    - *o* Involve legal personnel to make sure the use of the learning analytics system is in line with legal requirements such as GDPR.
    - *o* Communication of clear guidelines for all relevant stakeholders about the role and responsibilities of the call team, the tutor, and student support services, particularly for ongoing student cases. *[4.2 Recommendations, NTU O12- Calling Service Trial*]

- *Processes need to be justified and made public*
    - *o* The range of action varies widely. Data can be used to inform staff or students but can also lead to or be part of an action, preferably framed in a carefully designed pedagogical model of intervention (see also advice 1, O4). The bare minimum, making students aware, might already be the most efficient at motivating them to seek help. [*O4 advice 4]*
    - *o* It remains important not to undermine the autonomy and initiative of the student and to inform the student sufficiently on the fact that the university of applied sciences keeps data on him/her and - if necessary - can react on those data. *[Summary 5.4 Communication AHS-O12].*
    - *o* A clear communication plan that informs all stakeholders at key times throughout the process. *[4.2 Recommendations, NTU O12- Calling Service Trial]*

- *Be clear on (possible) limitations of data use*
    - o These can be technical limitations or limitations set by policy or law.
    - o The importance of updating university systems with the name of each students' tutor and communications on how to do this. *[4.2 Recommendations, NTU O12- Calling Service Trial]*
    - o There are many reasons why students may not have answered the call (wrong number, inconvenient time, did not recognise the number/did recognise that it was a university

number, etc.). There's no reason to believe that the call team was particularly bad at this, it appears to reinforce the challenges of effective communication. *[Discussion and recommendations 4.2 Communication– NTU O12 Summer Calling campaign]*

- *Comply to GDPR & other legal requirements*
  - o A bare minimum is letting learners know they are being tracked or asking their permission for example through checkboxes. [*O4 advice 1*]
  - o Assuming most follow legal requirements, one explicit mention is made of a 'Policy for the ethical use of Student Data for Learning Analytics' that goes beyond the legal requirement. [*O4 advice 1*]

3.6 Focus on dynamic data

Useful learning analytics data contains recent data that is dynamic, data that shows recent behaviour and data that is actionable. This data could be accompanied with static data, such as demographics, previous performance, and credit load as it is known that these characteristics have predictive value for study success. Nevertheless, avoid a unique focus on these static parameters, as students are not able to change these.

- *Dynamic data*
  - o … it is important to use a combination of (current) of which dynamic, recent behaviour should be viewed with more significance as it is actionable. [*O4 advice 3*]
  - o References to dynamic attributes, like data on performance and effort, include student (online) activity data (e.g. total hits or number of quizzes taken on the learning management system, deadlines (not) met), current academic performances, and interaction/group work data. [*O4 advice 3*]
  - o Gathering data merely for the sake of data will not impact course completion, student success, retention rates or anything else. In order to lead to results, data should lead to action, either on the side of the student, the staff or the institution. [*O4 advice 4*]
  - o … always accessible, (near-)real time visual representation for the use by students but also as a tool for support staff, lecturers, instructional designers, or even administrative staff. [*O4 advice 5*]
  - o Some staff identify groups of students due to their characteristics [*AHS O6, 4.2*], through study progress reports (UMCU O6, 2.1), or a combination of various triggers [*NTU O6, 3.2.3*] and keep a 'closer eye' on these groups. *[Overview output 6- 3.1 prompt/alerts p8].*

- *Static data*
  - o References to static data include demographic information, information of the admission application, financial situation, administrative aspects of academic performance, registration data, scores on placement tests, academic ability and history (concurrent credit load, total sum of credits successfully completed and total sum of credits attempted but not successfully completed). [*O4 advice 3*]
  - o Static data are known to have predictive value for future study success. Study success in Master educations could be predicted using: Grade Point Average of previous degree (BSc), time to previous degree, age and gender *[Summarizing conclusions, O9- UMCU]*
  - o A search in literature confirmed that historical achievements are most predictive for success in current and future projects. *[Summarizing conclusions, O9- UMCU]*

3.7 Include post data processes

The project aims to go onwards from learning analytics, meaning that learning analytics data is used to identify students at risk, and to take subsequent action. In other words, the post-data processes must be included. Post data processes include descriptions of the decisions made and the outcomes gained. Therefore, it is important to set rules for record keeping (who is allowed to see and adapt notes and data).

- Through staff interviews, we understand that the main outcome of receiving an alert is a trigger for action [*NTU O6, 3.2.1*], and that action is primarily to establish contact with the student, particularly for learning [*Overview O6-3.1. prompt/alert, p8*]
- Students who discussed their FIT-results in group with a study coach evaluate this conversation not only as very meaningful and informative, they also feel more willing to adapt their own study behaviour, regardless of how those FIT-results initially reached them. A conversation thus certainly adds value. [*Summary 4.4 summary & discussion AHS-O12*].
- Tutors also asked for further clarity about how much they can report on the Student Dashboard about a student [*Comment and recommendations, 3.3 Clarity about sharing of information, NTU O12 – Calling Service Trial*]
- The callers also highlighted that the current recording of students on the spreadsheet is suitable for a trial such as this, but long-term a more robust system of recording student cases is needed such as a Customer Relationship Management (CRM) system. [*Comment and recommendations, 3.4 Further potential to streamline the communication process, NTU O12 – Calling Service Trial*].
- Records of all calls were logged in the Student Dashboard, but this required a tutor to log in and check to see if a call had been completed. Given the time pressure on colleagues, a more automated update referral is desirable, and this was carried out subsequently in O12 NTU Calling Trial. [*Discussion and recommendations 4.2 Communication– NTU O12 Summer Calling campaign*]
- We strongly recommend that all interventions are logged to help the callers prepare and that calls are supported by an integrated communications/ records approach so that callers can see issues such as grades, deadlines and the range of support students are already receiving. [*Recommendations 5.3 Intervention – NTU O12 Summer Calling campaign*]

3.8 Shape policy aware of technical capacity

Policy will be shaped by the capacity of technology. This includes both technical opportunities as well as (current) limitations. It is therefore advised to involve IT personnel in an early stage of development. Academic support staff can identify needs and requirements for a learning analytics dashboard, whereas IT personnel can share insights in what can be achieved by the technology.

- The Student Tracking System could be more efficient for student counsellors. There is room for improvement in terms of personalisation, clarity, search options, privacy and autonomy of the student and integration with other systems [*Summary 3.4 student tracking system AHS-O12*].
- Student counsellors are rather reluctant to automatic notifications. They are concerned about the autonomy and self-direction of students, stigmatisation, privacy and the overload of communication. Students are much less reluctant to automatic notifications. [*Summary 3.4 student tracking system AHS-O12*].

- Involve IT infrastructure teams to inform efficient processes such as making and monitoring of calls *[4.2 Recommendations NTU O12 – Calling Service Trial*].
- Some students did not have a number saved in the student records system, but a bug was found where a small number of students had changed their numbers, but this change had not registered in the learning analytics system. Subsequent work has been needed to try and fix this problem. *[Discussion and recommendations 4.1 Trigger/ Prompt – NTU O12 Summer Calling campaign]*