



Universiteit
Leiden
The Netherlands

Finding valuable direction for teaching and learning in campus-integrated Medical Massive Open Online Courses

Hendriks, R.A.

Citation

Hendriks, R. A. (2022, October 11). *Finding valuable direction for teaching and learning in campus-integrated Medical Massive Open Online Courses*. Retrieved from <https://hdl.handle.net/1887/3479687>

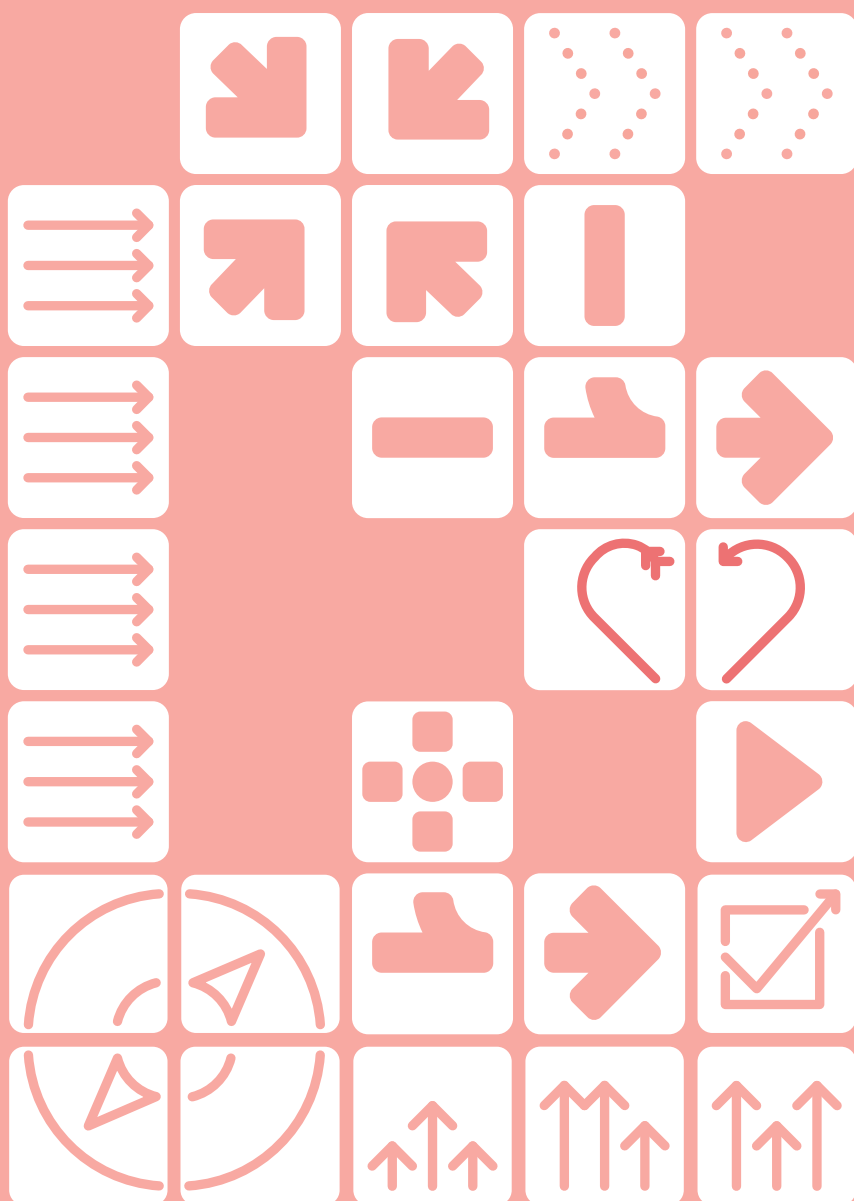
Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3479687>

Note: To cite this publication please use the final published version (if applicable).

CHAPTER 8



Assigned Learning Goal Acceptance Theory: a Model to Understand Learning Goal Acceptance Processes of Undergraduate Students

Renée A. Hendriks
Peter G. M. de Jong
Wilfried F. Admiraal
Marlies E. J. Reinders

Submitted

Abstract

For successful campus-integrated MOOC learning students require Self-Regulated Learning skills, specifically goal-setting. Goal-setting is most effective when goals are self-set, however in formal undergraduate education, learning objectives are often assigned. According to literature acceptance of assigned learning goals is key for learning when goals cannot be self-set, however processes of acceptance or rejection have not been described. The present constructivist grounded theory study offers Assigned Learning Goal Acceptance Theory, a model to understand learning goal acceptance of undergraduate students with four elements: 1) the perceived fit of learning goals as a tool with students' study strategies; 2) the level of explicit or implicit acceptance of content of learning goals depending on the student's strategies; 3) the level of acceptance that is based on considerations of usefulness, comprehensibility, and perceived constructive alignment of learning goals within a course; and 4) students' acquiescence to whatever is expected to pass the examination.

Introduction

Online delivery of higher education is still on a rise, currently pushed by global countermeasures in response to the COVID-19 pandemic. A clear example of innovative online delivery of higher education are Massive Open Online Courses (MOOCs). Since their origination in 2008, MOOCs have become an accustomed addition to the educational landscape ((Bozkurt et al., 2017). In addition to their informal availability, MOOCs are being integrated in formal campus education (Marks & Meek, 2018; Pickering & Swinnerton, 2017; Reinders & de Jong, 2016) as this integration offers several advantages (de Jong et al., 2019; Hendriks et al., 2019). How to optimally integrate MOOCs in campus education is still unclear.

Recently it was found that students require strong Self-Regulated Learning (SRL) skills for successful MOOC learning, because in the MOOC context teacher and tutor support is limited, similar to many other online learning contexts (Blau et al., 2020; Broadbent & Poon, 2015; Jivet et al., 2020; Kizilcec et al., 2017). In particular the aspect of goal setting has been described as an essential skill for informally learning in MOOCs as this is related to lower attrition and higher achievement (Kizilcec & Halawa, 2015; Rohloff et al., 2019). Goal setting is defined as ‘the process of deciding what you want to achieve or what you want someone else to achieve over a particular period’ (Cambridge dictionary, 2021).

Regarding the origin of the goal, five levels of goal setting have been previously described: 1) Setting goals personally, done by the person or group that is to pursue the goal; 2) setting goals jointly, done by the person that is to pursue the goal and another person that will not pursue the goal but has interest in attainment, in education this can be the teacher or mentor; 3) consultation, where the goals are assigned to the person that is to pursue the goal but she or he is consulted regarding the content and/or planning; 4) tell and sell, where the goals are assigned to the person that is to pursue them and a rationale is offered to support the goals; and 5) tell, where the goals are assigned to the person that is to pursue them without a rationale (Latham et al., 1988; Roberson et al., 1999). Moving from option 1 to 5, acceptance of the set goals by the person that is to pursue the goals is increasingly less assured, while acceptance of these goals is highly important (Erez et al., 1985; Latham & Seijts, 2016). This notion is supported by the findings that students who set their own learning goals are more autonomously motivated, set more challenging goals, show higher commitment and greater affect when attaining or not attaining a goal (Latham & Seijts, 2016). Therefore, when possible, (partly) self-set goals are preferred over assigned goals.

Efforts are being made to normalize personal goal setting in MOOCs (Rohloff et al., 2020), however having students set their own learning goals can be difficult to implement in a course design for several reasons. First, goal setting requires skills, as set goals are best when

articulated as measurable, difficult, long-term goals, which are then specified into short-term goals. Commitment to a goal and consideration of obstacles are essential (Latham & Seijts, 2016). Second, novice learners often do not know enough about a subject they are going to learn about to gauge what knowledge, skills and attitudes are essential, and thus what goals are relevant (Farrell, Bourgeois-Law, Buydens, & Regehr, 2019). Third, giving direction to one's own learning also requires some maturity (Jossberger et al., 2010; Saks & Leijen, 2014). Through scaffolding students could set high quality learning goals and learn what the criteria for effective goal setting are. This is especially feasible in online settings such as MOOCs. However scaffolding does not resolve the difficulties with gauging what relevant goals are or with readiness for setting one's own goals.

In short, personal goal setting is not always desirable, especially for younger and/or novice learners, which leaves the options of joint goal setting, consultation, tell and sell, and tell. In practice joint goal setting and consultation are very time consuming for a teacher and often nearly unattainable. Especially for larger numbers of student, as subsequent study activities and assessment need to be constructed in alignment with the learning goals. Thus, in most MOOCs, like in most regular courses, learning goals are still assigned (Rohloff et al., 2019) either implicitly or explicitly, and with or without a rationale (Hendriks et al., 2020a).

Latham et al., (1988) have suggested acceptance of a goal is probably even more important than who sets it, and Erez et al., (1985) found that goal acceptance significantly contributed to performance. Goal acceptance is understood as a necessary prerequisite for goal commitment: the continued state of attachment to or determination for attainment of a goal (Earley et al., 1992; Locke et al., 1988). The importance of acceptance can be supported by self-determination theory (Ryan & Deci, 2000). Student's acceptance and internalisation of assigned learning goals can be seen as autonomous motivation to learn: through *identification*, which entails the student's sincere understanding of the significance of an assigned goal; and *integration*, which entails that students connect assigned goals to their own norms and values (figure 1). Reversely, rejection of goals that are designed by others could steer students to the undesirable corner of the self-determination spectrum: controlled motivation or even amotivation. Promoting acceptance could thus be similar to changing the locus of causality from external to internal, by making goals personally meaningful.

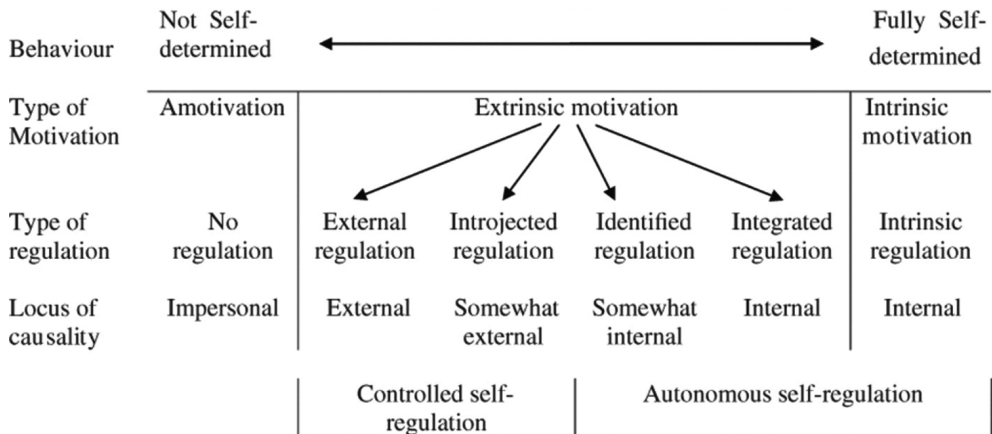


Figure 1: The spectrum of motivation according to SDT as adapted by ten Cate, Kusurkar & Williams (2011), printed in AMEE Guide No. 59, Med Teach, 33:12, 961-973. Original figure from Ryan RM, Deci EL. 2000. Self-determination Theory and the facilitation of intrinsic motivation, social development and well-being. Amer Psych 55 (1) 68–78.rations.

As far as we know, in regular higher education acceptance of learning goals is usually neither checked nor assured. In addition, literature that describes learning goal acceptance in online learning settings is lacking (Jiang & Elen, 2011), while it could bridge the gap between the theoretical preference to have students personally set their goals and the practical preference to assign them. For this reason we sought to gain insight in the processes that are involved in goal acceptance and rejection of undergraduate students in integrated MOOC designs with assigned learning goals. The research question of this study is:

What processes are involved in goal acceptance or rejection of undergraduate students in integrated MOOC designs with assigned learning goals?

Material and methods

Research design

As we searched for processes regarding goal acceptance and rejection an exploratory and a qualitative research design was applied. We wanted to understand the processes from the perspective of the students through individual interviews. As to our knowledge no theory has been described regarding this subject, we opted for a constructivist grounded theory approach. This study is part of a larger mixed methods research project (Hendriks et al., 2020b).

Context description

The study was conducted at Leiden University Medical Center (LUMC) in the Netherlands. Participants studied MOOC-content between May 2019 and March 2020, before the

COVID-19 pandemic spread to the Netherlands, and interviews were conducted online between June and September 2020, during the pandemic. Three MOOC integration designs for undergraduate students using a MOOC on Clinical Kidney transplantation (de Jong et al., 2019) were selected for this study, as previously described and depicted in Hendriks et al, (2020b). Three designs of the integration of one particular MOOC in campus education have been studied.

- *Integration design A* consists of completing the MOOC before joining the 3.5-day undergraduate level ‘Leiden Oxford Transplantation Summer School’ (LOTS) which runs annually in July (Leiden University website 2019). Joining this LOTS course is voluntary and acceptance of students is based on a letter of application. However, once accepted into the course, completing the MOOC is a prerequisite to be admitted to the face-to-face meetings. Students enrol in the MOOC individually, where they participate alongside other global MOOC learners. Approximately 20 students join the LOTS course every year.
- *Integration design B* is an 8-week compulsory second-year module called ‘Mechanisms of Disease’ starting in October in which 1 week of lectures at the end of the course has been replaced by several activities in the MOOC. In this design, the entire cohort of approximately 300 students is enrolled in a separated version of the MOOC course and thus has no contact with MOOC learners outside of their cohort.
- *Integration design C* is an elective course for undergraduate students that have enrolled in the Leiden University Honours Programme (Ommering et al., 2018). The honours programme is designed for students that long for more challenge in their studies. All students in this integration design have to complete the MOOC at any time in their first or second year of undergraduate studies and have to submit an additional written assignment. Students do not meet face-to-face with other students as it is an individual online course. Approximately 14 to 18 students enrol in this integration design annually.

Participant selection

We purposefully sampled students to capture a broad range of perspectives relevant to the research question. Information on motivation profiles, SRL scores, sex, age, MOOC integration design and university were used from a dataset that was available from a prior investigation in the same research project (Hendriks et al., 2020b). In the final sample of 13 participants, seven were female; three, ten and one student(s) participated in integration design A, B and C, respectively; and participants were from three different universities: Leiden University, Maastricht University and Plymouth University. Age ranged from 19-23. SRL scores and motivation profiles varied distinctly.

Materials

An information letter, semi-structured interview guides in Dutch and English, and an informed consent form were developed (Appendices E, F, H & I, respectively). All interviews were conducted online because of COVID-19 regulations.

Data collection

After selection of potential participants from the database, an invitation to partake in an interview including extended information about the research project was sent via email by RH who would also conduct the interviews. RH had no dependency relationship with the students. When a student accepted the invitation, a Microsoft Teams meeting was planned. At the beginning of the interview the research aims, course of events during the interview and informed consent were discussed. Consent for a recording of the meeting was requested before the interview. Participants were asked to confirm their consent to use the interview data after the interview had taken place, to ensure they could discern the information they would be sharing. After the interview participants were offered the opportunity to discuss the motivation and SRL scores they were selected upon. Interviews were recorded and transcribed verbatim by a trusted external commercial party that ensured confidentiality. In total, thirteen interviews were conducted from June 2020 to September 2020 and lasted between 38 and 61 minutes.

Participant validation was sought through written member checks of synthesized analysed data (Harvey, 2015): students received a summary of the interview transcript via email, written by the researcher that conducted the interview, based on the open and sometimes axial codes in the transcript. Participants were asked to comment on the summary and supplement any information they deemed relevant, to ensure a fit of the member checking method with our interpretivist research paradigm (Birt et al., 2016). All participants signed the informed consent, agreed or added to the member check summary and consented with use of their quotes.

Analysis

Analysis took place in iterations of open, axial and eventually selective coding (Glaser & Strauss, 1967; Watling & Lingard, 2012). Interviews were divided into four iterations: interview 1-4, 5-7, 8-10 and 11-13. Data collection, analysis and memo writing as approach to reflexivity were alternated as can be seen in appendix N. Open coding took place in Atlas.ti, by linking open codes to text selections in the transcripts. RH and PJ did this individually for all interviews, creating a list of open codes per interview transcription. RH and PJ discussed each open code, what it meant in its context and whether there was an appropriate super category. Then a list with associated codes was given an axial code, which could change if a new open code was added or removed in a later iteration, to better accommodate the list of open codes. In the first iteration of axial coding, we quickly learned that some open codes were irrelevant or awkwardly coded. We then adjusted those codes, or filtered them

out by constantly considering whether each code was relevant to the research question. Open coding then increasingly improved in relevance and accuracy. In the third iteration, ideas started to emerge as to how axial codes were related (start of selective coding) and some early sketches of the proposed model emerged then as well. During axial coding of iteration four, no new themes emerged and we deemed the data saturated. After axial coding in iteration four, selective coding was finalised by sketching the model. When the coding scheme and visual models were in a nearly final stage, WA performed an audit trail check to enhance confirmability (Frambach et al., 2013). The theory and model were then discussed among all authors for peer debriefing and then finalized.

Establishing the scope

Analysis influenced data collection and vice versa. When we realized that students mentioned learning in integrated MOOCs was sometimes similar and sometimes different from their normal study activities, we set out to analyse this difference further and add a question to the interview guide of interview 5 to 13: “why is this different for you?”. We decided to extend our scope of relevant questions and answers to the standard curriculum as students indicated that their perceptions, acceptance and use of goals did not differ based on MOOCs or standard curriculum, but their strategies differed in relation to the obligatory nature of the activities and personal interest in the study subjects.

While analysing it also dawned on us that perceptions surrounding learning goals could explain the way that students accept, reject or use assigned learning goals, and that use of learning goals and other study strategies could be relevant for our research question. As described above, super categories of codes were constructed during analysis: 1) Studying and strategies, 2) Using or not using the learning goals, 3) Perceptions surrounding learning goals and 4) Processes of accepting and rejecting the learning goals, learning content or the assigned study system. During axial and selective coding these themes intertwined to form Assigned Learning Goal Acceptance Theory (ALGAT). Most themes in the first super category ‘Studying and strategies’ were helpful in understanding how students study, but were dismissed in the end as the themes did not offer new insights (Watling and Lingard, 2012).

Ethical considerations

This study was approved by the Educational Research Review Board (ERRB) of LUMC. It is subject to the Dutch General Data Protection Regulation (AVG) and was conducted according to it. Participants signed an informed consent form and were aware they were able to withdraw at any moment without consequence. Participants were not offered compensation for partaking, nor were they disadvantaged in any way. Participants could benefit from participation as they were offered personalised discussion and feedback of motivation and SRL scores collected during their studies.

Results

In this section we will describe a global description of Assigned Learning Goal Acceptance Theory, which is followed by an in depth explanation.

Assigned Learning Goal Acceptance Theory

The basic tenets of the theory are depicted in figure 2: There are five areas of acceptance and students flow through these from left to right. The five areas are 1) *Accepting the Prescribed Study System*, 2) *Accepting the tool*, 3) *Accepting the goal content implicitly*, 4) *Accepting the goal content explicitly* and 5) *Acquiescence*, leading to *Accepting the Prescribed Study System* again. Themes that belong to the areas *Accepting the goal content implicitly* and *Accepting the goal content explicitly* were closely related to specific study phases in a course, namely the start/instruction phase, and the middle/processing phase which both include activities that are planned by the instructors, such as lectures and working groups. Similarly, themes in the *Acquiescence* area were closely related to the final study phases of preparing for, taking and right after the final examination. The areas of *Accepting the Prescribed Study System* and *Accepting the tool* were not specifically related to a course phase, but to fundamental and persisting assumptions. In their flow, students either come through the area of *Accepting the goal content explicitly* or *Accepting the goal content implicitly*, creating two routes. Within h route more variation in acceptance and use of goals and perceptions and considerations about goals exists, as can be seen in figure 3 and tables 1 to 4, and as we will describe below.

Accepting the Prescribed Study System

In the process of accepting or rejecting assigned learning goals, the participant's acceptance of the formal system of their studies emerged as a fundamental theme. Here, the Prescribed Study System is defined as the combination of the guiding role of the teachers and coordinators by shaping the curriculum, the dependent role of the student, the assigned learning goals and content and the fact and function of final examinations. This acceptance is underpinned and illustrated by participant's considerations, listed in table 1, *considerations 1*.

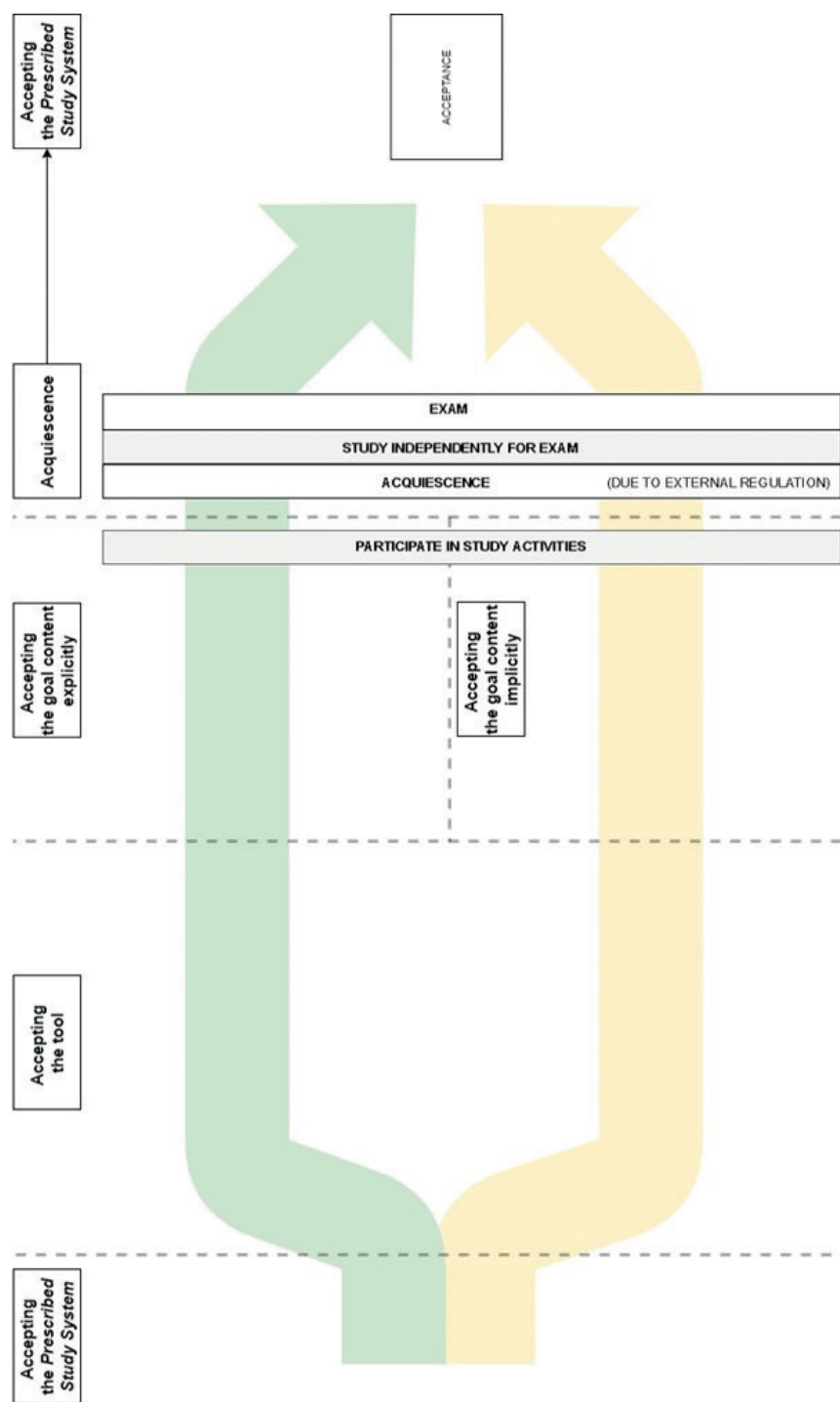


Figure 2: Basic flow of ALGAT. Students flow from left to right through five areas: 1) Accepting the Prescribed Study System, 2) Accepting the tool, 3) Accepting the goal content implicitly, 4) accepting the goal content explicitly and 5) Acquiescence, leading to Accepting the Prescribed Study System again. Students either come through the area of accepting the goal content explicitly or accepting the goal content implicitly creating two routes.

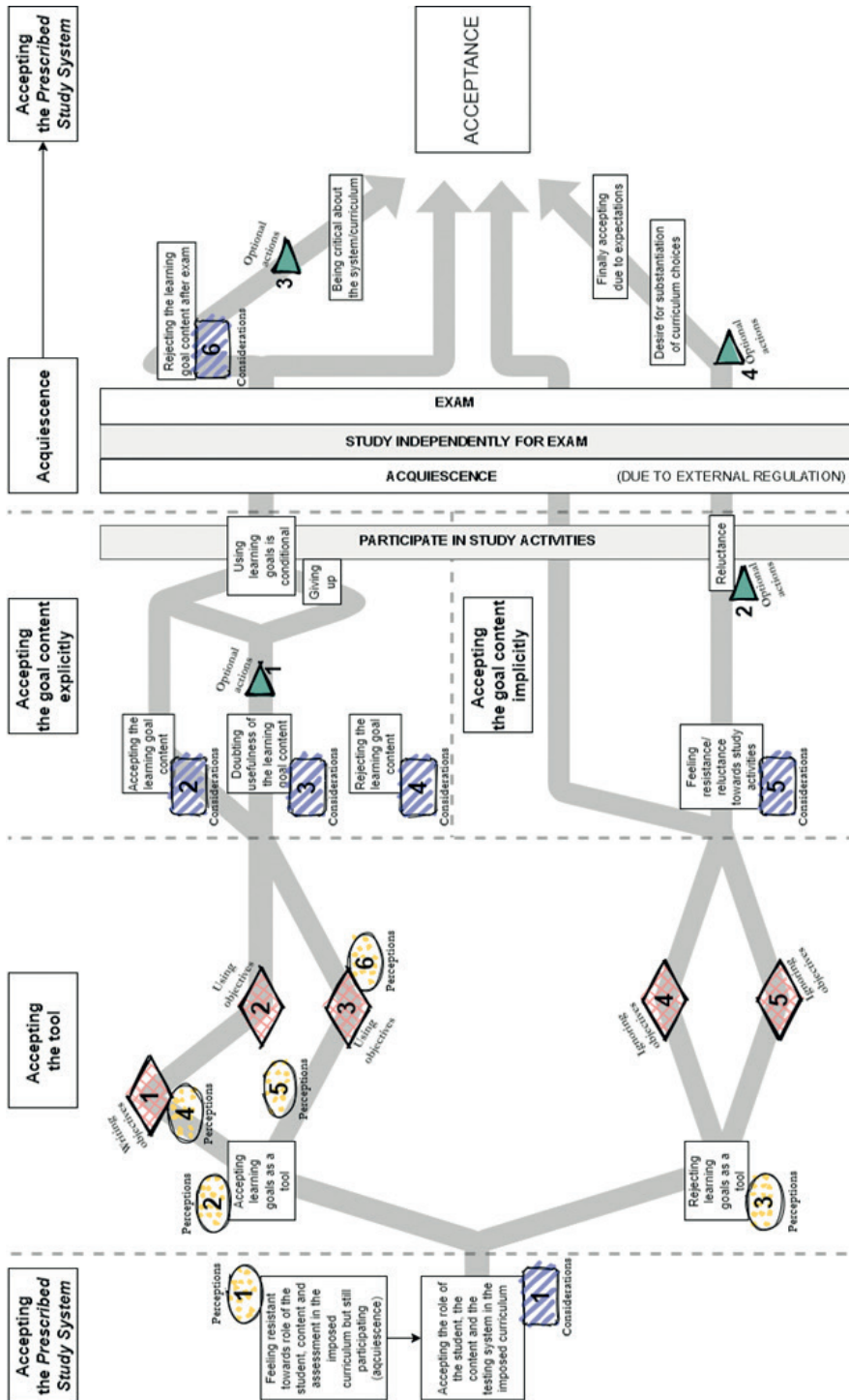


Figure 3: Detailed flow of ALGAT: Students flow from left to right through five areas: 1) Accepting the Prescribed Study System, 2) Accepting the tool, 3) Accepting the goal content implicitly, 4) accepting the goal content explicitly and 5) Acquiescence, leading to Accepting the Prescribed Study System again. In the figure multiple Considerations, Perceptions, Uses of objectives and Optional actions are included, which are specified in the related tables. In area 1

Continuation figure 3 subscript:

all students start out accepting the Prescribed Study System, with or without feeling resistant about it. In Area 2 students split into users and non-users of learning goals, with variations in strategies for both. In area 3 all goal users accept, doubt or reject the learning goal content explicitly. In Area 4 non-users accept or reject the learning goal content implicitly. When learning goal content is rejected implicitly, study activities are participated in with reluctance. In Area 5 all students acquiesce and study independently for their exam. After the exam some students feel critical which is sometimes discussed with instructor or peers. In the end all students defer to the Prescribed Study System because they are adamant on passing the exam.

Table 1. Considerations.

Considerations	
1 For accepting the guiding role of the teachers and coordinators, the dependent role of the student, the assigned learning goals and content and the fact and function of final examinations	<p>The assigned curriculum is useful</p> <p>The program matches what I want to learn</p> <p>I will do what I signed up for</p> <p>Trust</p> <p>Someone must determine the direction and the instructors and coordinators are the best candidates for this because of their experience</p> <p>Not wanting the responsibility of deciding on the program to become a doctor</p> <p>There is also freedom to pursue subjects that interest them personally</p> <p>Studying becomes more and more interesting</p> <p>A curriculum based on learning goals that are democratically decided by the students would be very time consuming and tasking in the practical sense</p>
2 For accepting the learning goal content	Can understand and relate to it or find it useful
3 Doubting usefulness of the learning goal content	<p>Learning goals are contradictory to each other</p> <p>Learning goals are abstract</p> <p>The complementary information cannot be found in the offered study materials</p>
4 For rejecting the learning goal content	Cannot understand or relate to it or find it not useful
5 For feeling resistance/ reluctance towards study activities	<p>Activities do not feel authentic</p> <p>Activities are very energy or time consuming</p> <p>It is unclear to students as to why they are to do what is demanded</p> <p>Not all content should be mandatory for every student</p>
6 For rejecting the learning goal content after the exam	Exam questions that did not link with a learning goal or a learning goal that was not examined

Considerations ranged from ‘the assigned curriculum is useful’ and ‘the program matches what I want to learn’ to ‘I will do what I signed up for’. Participants often mentioned to ‘trust’ the instructors and coordinators who created their studies, stating that ‘someone must determine the direction and the instructors and coordinators are the best candidates for this because of their experience’ and some even said to ‘not wanting to have the

responsibility themselves of deciding on the program to become a doctor'. Participants described that they accept the system because 'there is also freedom to pursue subjects that interest them personally' for example through electives. In addition, one participant mentioned that he believed 'studying becomes more and more interesting' and fulfilling to him, as with every new step in his educational trajectory, for example from secondary education to higher education, he could choose a direction that matched his interests even more. Finally, one participant reasoned that 'a curriculum based on learning goals that are democratically decided by the students would be very time consuming and tasking in the practical sense'.

'They just show a bit of all branches of the profession and they also give you a certain perspective. Certainly within a very collaboration oriented profession I think it is important to realize a little bit of what other people are doing and, um, what falls within other professions within medicine.' – P

'Uh, and you know, if you choose (your education), then you have to go for it. You have been admitted for a reason' – L

Not all students accepted the system right away (see Table 2, perceptions 1), K instead described his problems with the design and function of examinations, as he felt that in practice examinations instead of learning goals steer learning strategies.

'I am not really in favour of the current examination system anyway. ... we've made a lot of progress in all forms of education except how we ultimately, judge people on how they performed... If you still use the old-fashioned, form of examination ... teachers cannot say exactly what is expected of you. Because ... if you had a lecture of one hour and they would (state) we are going to ask exam questions about this, then ... people are going to look at those three slides and not at the rest ... That's the problem with the examination system right now, the most important thing for the student ... is getting your bachelor's degree. ... If you know exactly what questions are going to be on the exam, then you are going to learn those topics and then you are not going to learn the rest because that is not important for now.' – K

Table 2. Perceptions.

Perceptions		
1	Of students who feel resistant towards the <i>prescribed study system</i> but that still participate	<p>The system is difficult to change</p> <p>I have no other option if I want a career</p> <p>I can succeed in the system</p>
2	Of students that accept the learning goals as a tool	<p>Learning goals are important</p> <p>Learning goals are enjoyable</p> <p>Learning goals give direction</p> <p>Learning goals give finality to an activity</p> <p>Learning goals give meaning to an activity</p>
3	Of students that do not accept the learning goals as a tool	<p>Learning goals are obvious</p> <p>Learning goals are not useful</p> <p>Learning goals are unnecessary</p> <p>Learning goals are abstract</p> <p>Learning goals are difficult to use</p> <p>Learning goals are time consuming to use</p> <p>Learning goals are a formality</p> <p>The instructors do not care for the learning goals either</p> <p>Learning goals are useful for the instructors and not for students</p> <p>Strategy without using learning goals works well</p> <p>Content is often more extended than the learning goals and the exam will be a reflection of the extended content</p>
4	Of students that construct their own learning goals	<p>setting my own learning goals is useful</p> <p>Setting my own learning goals is enjoyable</p> <p>Setting my own learning goals or adapting set goals links the content to me personally</p>
5	Of students that do not construct their own learning goals	<p>Setting my own learning goals is unnecessary</p> <p>Setting my own learning goals is not useful</p> <p>Setting my own learning goals is not useful yet</p> <p>Setting my own learning goals is difficult</p> <p>Setting my own learning goals is time consuming</p> <p>I have no experience in setting my own learning goals</p> <p>I would need assistance if I were to construct learning goals</p> <p>Setting personal learning goals together with an instructor is beneficial for others but not for me</p> <p>Setting personal learning goals independently is beneficial for others but not for me</p>
6	Of students that use learning goals only right before the exam	<p>The learning goals are part of the deal</p>

In the end, however, K described he had to and would yield to this system, as he explained that the system is unwieldy and difficult to change, that there is currently no other path to the profession he desires, and finally that he is able to meet the requirements of the system.

Accepting the tool

Students view learning goals or objectives as a tool that can be used, but does not have to be used. This divided students into two groups: those who accept the tool and those who do not. This distinction is based on the perceptions that 'using learning goals or not is personal', 'learning goals are optional' and 'learning goals are useful for other students'. Both groups seem to know the other group exists. These groups have very different perceptions about learning goals as can be seen in table 2, *perceptions 2 and 3*.

The students who accept goals consider learning goals to be useful, important and/or enjoyable. They also state learning goals give direction, finality and/or meaning to an activity.

'You know, without the learning goals I wouldn't know which kind of (knowledge) level you want me to know ... It is sometimes very difficult. Also you have the lectures, but you don't know if the teachers want you to know more than that or if the lectures are enough. And I think that is where the learning goals come in. So handy that you know what levels they are expecting, and it makes things easier for both sides.' - E

'I think it's important ... to know why you're doing something. And know the finality of that thing.' - M

Students who do not accept learning goals as a tool perceive learning goals as obvious, not useful, unnecessary, abstract, difficult to use, and time consuming to use. In addition some view the learning goals as a formality that needs to be mentioned in class by the instructor, mentioning that possibly the instructors do not care for the learning goals either. Conversely, others see the goals mainly as a tool that is useful for the instructors and not for students. Participants state that their strategy without using learning goals works well and that it is better to focus on all content and activities than on learning goals, as the content is often more extended than the learning goals and the exam will be a reflection of the extended content.

'They are often somewhat cryptic terms.' - F

'It seems obvious to me that if you learn all the material that is offered, that you will eventually still achieve the goals that were set.' - J

'I think learning objectives cover what you need to know in a lot of cases. Maybe not always during an exam, because then they go into more details.' - D

The use of learning goals seems directly related to the acceptance or rejection of the learning goals as tool: the accepters use the goals and the rejecters do not. In using the goals, variation seems to exist, which can be found in table 3, *Use of objectives 1, 2 and 3*. Some students use the assigned learning goals and personalize these or they construct their own learning goals in addition. This was stated to be useful, enjoyable and viewed as linking the content to oneself, as described in Table 2 *Perceptions 4*.

'Still, I like it very much. It can help you to make something concrete for yourself, a kind of plan for what you actually want to learn.' - N

'Well, because the course was there it, it is made for several people. For anyone that wants to learn. But me as an individual, I think I have specific needs and requirements, and I should adapt them to myself. ... Because it stops being something that is far from me, to something that becomes personal' - M

Table 3. Use of objectives.

Use of objectives		
1	Of students that write objectives/learning goals	Constructing personal learning goals Personalizing or adapting assigned learning goals Discussing personal learning goals with others
2	Of students that use objectives/learning goals (A)	Searching for assigned learning goals at the start of the course or MOOC Integrate assigned learning goals with content Using the learning goals as foundation for a written summary
3	Of students that use objectives/learning goals (B)	Only notice the learning goals in the beginning of the course if they are mentioned Search for the assigned learning goals at the end of a course before the exam Check if all the learning goals were accounted for in the summary
4	Of students that ignore objectives/learning goals (A)	Ignore assigned learning goals and focus on content, prioritizing specific sections or media
5	Of students that ignore objectives/learning goals (B)	Ignore assigned learning goals and focus on covering all content

These students go on to use the learning goals in the following way: they search for them at the start of a course or MOOC, integrate them with the content by linking goals to activities and vice versa, and use the learning goals as foundation for a written summary before the exam (table 3, *Use of objectives 2*).

Not all participants enjoy setting goals in addition to using the already offered goals. They find setting their own learning goals unnecessary, not useful or not useful yet, difficult or time consuming. Participants stated to have no experience in setting their own learning goals, to find it difficult and to need assistance if they were to construct learning goals. Finally some participants stated that setting personal learning goals together with an instructor or independently might be beneficial for others but not for themselves (table 2 *Perceptions 5*). These students either use the assigned learning goals in the same way as the students that do construct their own goals, or they used the goals in the following way: they skip the goals in the beginning of a course, but search for them at the end of a course before the exam, and check if all the learning goals were accounted for in their own summary of the content (table 3, *Use of objectives 2*). This last category of students also found learning goals to be 'part of the deal', meaning they could not be ignored (table 2, *Perceptions 6*).

In not using the goals we also discerned variation, as can be found in Table 3, *Use of objectives 4 and 5*. In this group, all students focused on content and not on goals, however some focused their attention and some were adamant on covering all offered content. The selecting participants focussed to a specific section or medium, such as lectures, because this was their tried and trusted strategy. One student even based his time and energy investment on the examination matrix, favouring subjects that were stated to be examined more extensively or with more difficult questions.

'Before I start studying, I always look in the test matrix to see what is important, and which lectures need a little less time. My entire study actually consists of a trade-off of time and what is worth the most points.' - K

Accepting the goal content explicitly

Logically, only students that are aware of the learning goal content can accept or reject the learning goal content. From our data we gather that regardless of the way learning goals are used, students accept, reject or doubt the usefulness of the learning goal content, as can be seen in table 1, *Considerations 2 and 4*. However, students will give up their rejection and study the learning goals even if they cannot relate to them.

'I find receptors at the cellular level not necessarily interesting. And if you then have to learn all that ... Then I think why should I have to cram it all for this exam while I will have forgotten that in a month or maybe next week. ... If I need that later, I will look up the details then. And it seems to me that you only need that in a lab or something and I don't want to do that work myself. So I just question, why should I start cramming this now? But in the end I will cram it for the exam.' - A

Doubt about learning goals occurs when learning goals are contradictory to each other, when they are abstract, or when the complementary information cannot be found in the offered study materials (table 1, *Considerations 3*).

'But for some modules, sometimes there's contradictory information. ... people can create a module that says that we'll focus on the basics of microbiology, but then you also have to go into the specifics' - M

'There were some learning goals which I felt like weren't really discussed in the lectures or in the tutorial that we had. So I think then it is really unfair If you state learning goals and as a teacher you don't really discuss them specifically enough to ask questions to students.' - E

When in doubt, students discuss with the instructor, their peers or both, or they search for information independently outside of the study materials (table 4, *Optional Actions 1*). This can lead to acceptance if the doubt is taken away, or rejection if not. Acceptance of goal content is thus conditional and based on usefulness, concreteness, clarity of the goal and findability of the related content. Students will give up on goals they cannot accept.

'I sometimes do not know exactly what that learning objective is and where it was explained. Then I can search for it in the lectures, I can still look it up. I can check my notes of the lecture in question to see if I know what it is about. And if that doesn't work then I always have the internet to look it up. I will try to find out what they meant by those learning goals, so that I know for sure that I have also read that before the exam.' - L

'If I still do not understand, I look it up on the internet, on YouTube I look for a good video, where it is completely explained. I then hope I have learned some extra things from that. So that, when asked at the exam, I know at least something to say about it.' - L

Table 4. Optional actions.

Optional actions	
1 When doubting the assigned learning goals	Contact the instructor Discuss with peers Search for information independently
2 When feeling reluctant to fulfil or participate in study activities	Discuss with peers
3 When participation in study activities was unwillingly and the exam has passed	Discuss reluctance with instructor Discuss reluctance with peers
4 When exam questions that did not link with a learning goal or learning goals that were not examined are identified	Discuss with instructor Discuss with peers

Accepting the goal content implicitly

Students that do not use learning goals do not explicitly accept or reject the learning goal content. They do describe sometimes feeling reluctant to join the assigned study activities and content, in which the learning goals content is implicitly present. This happens when activities do not feel authentic, are very energy or time consuming, or when it is unclear to students why they are to do what is demanded. In addition students feel not all content should be mandatory for every student, especially when they have already developed certain skills (table 1, *Considerations 5*).

‘Often I think okay, I’ll get to work, but then I’ll read the article and then- If the PDF already says at the top, this is ten or fifteen pages long, I start to feel like oh, it is a lot, but fine. Then when you start reading and you’re two, three pages in and they still haven’t really said anything useful, then I think why should I read those pages while they don’t really get to the point? And that may also have something to do with the subject ..., but then I start to think, why?’ - F

‘I wonder whether that kind of education is necessary at all for a lot of students.’ - D

Participants describe that they sometimes discuss this reluctance with peers, but that they will participate in the activities either way as it is obligatory (table 4, *Optional actions 2*).

‘Of course I just participated, because it was, in itself, quite funny to just mess around with your workgroup. But if I just think back to that, did this actually benefit me? Not much.’ - F

Acquiescence

All participants described that they would, in the end, defer to whatever was expected of them, even if they do not fully understand or agree with the expectation, as they were adamant to pass the examination. After finishing the exam the group of students that knew the learning goal content sometimes identified exam questions that did not link with a learning goal or a learning goal that was not examined, leading to a rejection of the learning goal after the exam (table 1, *Considerations 6*). This could then lead to discussions with peers, the instructor or both (table 4, *Optional actions 3*).

‘But that is often just a written comment after an exam like: hey, I did not encounter this question in the course material, where is it?’ - I

‘First of all I just talk to my workgroup mates, hey, did you have that too? And how did you do that? And does anyone happen to know where that information is? And we also have a very large Whats-app study group and then people just throw questions in it, hey, this came back, where was that actually? And if that doesn’t work out, I

just ask it during a workgroup or if there is a discussion of the exam. Then I just ask a question, where can I find that?’ - I

Students described feeling critical about the curriculum or the instructors when this occurred, however they still seem to accept the underlying system and focus on what they could do themselves.

‘I had the chance to actually talk with the professors about it and to see how they react and why they did it the way they did. ... It is of course very disappointing to see something like that and to notice that (a learning goal) wasn’t discussed. But I would try my best to just do it on my own and hope for the best.’ - E

Some students that did not know the explicit learning goal content would, after the examination, discuss their reluctance regarding the activities or content with the instructor, peers or both (table 4, *Optional actions 4*). Participants described wanting for a substantiation to understand the choices that were made in what and how they had to understand or complete the content and activities they endured or passed reluctantly. In the end however, they viewed this as an acceptable critique as the system offers them clear expectations, that they are usually able to meet.

‘Well, I know what to do and I can. So I’ll write it down. So in that respect, I don’t mind doing it at the time. But it does go against my will. And so (it is) reluctantly, to do that purely for that teacher and not for myself.’ - D

In the end students accept the Prescribed Study System it seems, both because of the earlier described considerations, and also because they feel they have little other options.

Discussion

In our context undergraduate medical students accept the Prescribed Study System although some students feel very critical. Integrated MOOCs are perceived as part of the Prescribed Study System when examination is made as important as other formal components in the curriculum. Students see learning goals as a tool that does or does not fit in their personal study strategy, and we found five different strategies regarding use of the learning goals. Acceptance or rejection of learning goal content can happen explicitly or implicitly, depending on the student’s strategy. When students run into a rejected goal, implicitly or explicitly, or if they doubt its usefulness, they discuss with instructors or peers, or they search for a solution on their own. In the end, students will acquiesce to whatever is expected of them because they are adamant on passing the exam. These combined findings form Assgined Learning Goal Acceptance Theory.

Not using Assigned Learning Goals

We found that students perceive learning goals as an optional tool that they are free to use. Some students do not even take note of the learning goal content and may not 'set' learning goals at all. This could lead to pedagogical distance: misalignment in the objective of learning tasks in theory, as designed by the teacher, and what the objective becomes in practice, as enacted by the students (Westberry & Franken, 2015). Our finding is in line with research from Brooks et al. (2014) and Osueke et al. (2018) in undergraduate courses in biology, (bio) medical and English students, who both found that not all students use learning goals and that this is related to their perceptions of learning goals. In addition to negative perceptions about learning goals, an interest-based learning approach might drive students not to follow the teachers agenda (Senko & Miles, 2008). In our study, many students stated that the examination focusses their study efforts, but that interest can exceed the examination. Although performance could be slightly hindered by focussing on interest-based learning, the participants in our study stated that their strategy without learning goals works for them; they can pass the exams.

Many studies seem to investigate goal setting and learning objectives in relation to other constructs with the assumption that (learning) goals are read and understood, which does not have to be the case (Jiang & Elen, 2011; Manzone et al., 2019). Consequently, participants in these studies might have been more focused on the assigned goals than usual and have acted differently than they would have in a more natural setting where they apparently feel free to not look at the goals at all. Checking personal goal setting strategies should always be considered when researching goal setting and related constructs.

Considerations for Accepting Assigned Learning Goals

Students accept or reject learning goals either explicitly or implicitly based on considerations of 1) usefulness, 2) comprehensibility and 3) perceived constructive alignment.

- *Usefulness.* Students that use learning goals go through them at the start of a course or right before the exam (Brooks et al., 2014; Osueke et al., 2018; this study), and consider the usefulness of the learning goal content when they do. This usefulness theme on goal content level aligns with the literature that underlines offering rationales when assigning learning goals, and with Simons et al. (2004), who found that students that see usefulness of a course for their current situation and for future situations 'are more task oriented and show more motivated behaviour'. The same consideration plays a role on the goals-as-a-tool-level for students that choose to not use the learning goals altogether: they reject the goals a priori based on the idea that learning goals as a tool are not useful. For students that do not use learning goals, the label 'not useful' might also depend on the difficulty that these students have in comprehending the learning goals and the mismatch they perceive between the learning goals and the exam questions.

- *Comprehensibility.* Students that use the learning goals check if they understand the goal content before they accept or reject the content, and take action when they do not understand. Students that do not use the learning goals stated that all learning goals are abstract and difficult to use. Brooks et al., 2014 found that over three quarters of their participants perceived learning objectives to be understandable only after they had completed the course. In our study some participants mentioned the same. The perceived abstractness of a learning goal might thus be closely related to the unfamiliarity with the content that is to be mastered. Formulating good learning objectives does demand certain knowledge and skills (Ferguson, 1998) and these could help in increasing comprehensibility, however the fact that some students have difficulty understanding while other students can understand the same goals, suggests that comprehensibility is also influenced by knowledge or skills of the student (Leone et al., 2019) such as verbal ability (McCrudden et al., 2010) and previous obtained content knowledge.
- *Perceived constructive alignment.* Students that use learning goals try to match them with the study materials. After the exam, students also try to match exam questions to learning goals when they feel an exam question referred to content they did not recognize. Students that do not use learning goals state that in their experience learning goal content does not cover all they need to know for the exam. This notion resonates with the finding that only 59% of students in the study by Brooks et al. (2014) agreed that ‘learning outcomes specify the level of learning required to pass an assessment’ and that nearly 60% of respondents found it ‘possible to underestimate the level of learning required to pass an assessment from published learning outcomes’. Constructive alignment is thus important for students to accept learning goal content, and in the long run to accept the learning goals as a tool, as they might lose trust when goals repeatedly do not clearly align with examinations.

Acquiescence

A finding that we have not seen described explicitly in the context of goal setting or goal acceptance is the acquiescence to the Prescribed Study System in order to complete one’s studies. Although it directs students to study the contents we want them to, we find this acquiescence undesirable as it is founded in external regulation. It is widely accepted that formal learning contexts are externally regulating the motivation of students through assessment (Allal, 2010; Harlen & Crick, 2003), in addition to intrinsic motivation that may exist. During our analysis the idea formed that students end up in a ‘learner’s trap’: they enter the school system and comply to it because it is the normal thing to do. Society portrays few other options for success in work and life than to learn and study in the formal system, and studying is widely perceived as the best thing you can do for your future. When students have entered a Prescribed Study System they have to accept that they do not know enough to set out the path. They may not be aware of this or want to set out the path, or even enjoy that it is decided for them. As the Prescribed Study System includes high stakes assessment of the assigned goals, it acts as a powerful external motivator that exists in addition to the internal

motivation students can feel for their chosen subject of study. Students can thus barely escape external motivation to learn, even if intrinsic motivation is present, because they have to surrender to the prescribed path, designed by more experienced and more knowledgeable coordinators and instructors. The idea of the learner's trap is in line with the notion of the cognitive path to self-regulatory skill: learning and teaching SRL skills is initially social in form with explicit instruction and modelling of the instructor, but becoming increasingly self-directed ((Zimmerman & Kitsantas, 2005, p. 519). To change acquiescence of the Prescribed Study System into identified or internalized acceptance at the start of an educational path, different assessment methods, for example formative assessment (Allal, 2010; Harlen & Crick, 2003), could be implemented as it has been found that these are less stressful (Cobb et al., 2013). Minimalizing the focus on the exam might create the space that is needed to focus on what it is really about: the desired development, as formulated in the learning goals. In addition, explicitly aligning learning goals of students and faculty (Harlen & Crick, 2003; Westberry & Franken, 2015) to improve autonomous forms of motivation to learn should be desired. We found it interesting that the notion of the examination as a driving force was mentioned as a problem on a larger scale by one of our participants. The fact that a student pointed out this problem implicates that awareness is spreading and research directed towards retaliating this very complex problem in the education system can count on support among multiple stakeholders.

Acceptance in MOOC Integration Designs

Originally our study was aimed specifically at learning goal acceptance processes of students in three different formal MOOC integration contexts. However, we found we had to broaden our scope as students described that their acceptance, use and perceptions of learning goals did not relate specifically to integrated MOOCs, but to the degree of obligation of that MOOC as a mandatory study component in their study programme. Students estimated obligation based on formal examination and study points, and increased obligation led to increased effort, including using learning goals, if this was the preferred strategy. In addition students would invest more time and energy if they were interested in a topic, regardless of obligation. This means that for learning goal use and acceptance in MOOC integration designs specifically, either personal interest or perceived obligation should be highly supported. For example, when MOOCs are integrated as electives, joining students will already have higher interest. When a MOOC is a mandatory component and personal interest is not ensured, extra attention should be paid to align the importance of the learning goals and the examination of the MOOC with the other learning goals and examinations in the study programme.

Practical implications

Practical implications from our findings to increase acceptance of assigned learning goals are threefold. Offering more information has been found to enhance acceptance of

assigned goals (Earley et al., 1992; Erez & Kanfer, 1983), and our study suggests this might be because of 1) improved perceived usefulness, 2) enhanced understanding of a goal, or 3) because a link between the goal and the tasks and related materials can be identified. First, if no option for joint goal setting or consultation exists, pay attention to telling and selling instead of only telling. Underlining why a specific learning goal is important for the student can help to identify with the goal, and it offers a handle to integrate the learning goal with their own values and norms, as proposed by Self-determination Theory (Ryan & Deci, 2000). The importance of a learning goal for the student is best explained in a way that underlines the use of the knowledge, skill, attitude or perspective in a future authentic activity (Simons et al., 2004). For example, the importance of a learning goal concerning collaboration in medical education could be underlined by describing difficulties that can arise in collaborating with interprofessional or multi-speciality teams. While students might regard their current collaborating skills highly, they have probably not yet encountered such difficulties and would probably want to be able to understand and handle such complex situations in the future stages of their studies and career.

Second, actively present the learning goals, state where they are listed (Leone et al., 2019), have a conversation about the concrete meaning of the goals or make it explicit that questions are welcome, and if possible check understanding (Jiang & Elen, 2011). Sana et al. (2020) offered the learning objectives in the form of questions on a pre-test at the start of a course and found that this positively augmented the learning gains. This method directs attention to the learning goals and makes the aims clear or creates a moment to investigate the meaning of a learning goal.

Third, underline the connection between learning goal content, study materials and the exam. When designing a course, the starting point is often the learning objectives, which are to be aligned with the teaching and learning activities, content and examination, to achieve constructive alignment. This means, that in most courses, instructors should have a pretty good idea of how learning objectives are related to the activities, materials and exam questions. Students take learning objectives less seriously when this alignment fails (Crowe et al., 2008; Osueke et al., 2018). For students, it is helpful if instructors are transparent about the alignment in a course (Leone et al., 2019). This can be done by stating for each activity or material to what learning goal(s) it is related, and by offering a matrix that conveys where materials related to learning goals can be found.

In addition, keep in mind that having students setting their own learning goals could decrease acceptance of the assigned learning goals if there is a mismatch, so unless time and energy can be spent on aligning self-set and assigned goals, this is not advised (Austin, 1989; Erez et al., 1985). Finally to help students use learning goals, explaining how and when they are helpful (Osueke et al., 2018) could improve the acceptance of learning goals as a tool.

Future research

We propose future research efforts to be directed to three areas. 1) The confirmability of our findings in other context where learning goals are assigned. ALGAT poses a model to understand learning goal acceptance, however it was formed in a single context. Data from other contexts is needed to further ground the theory and possibly refine and add to it. 2) The portions of students that do or do not use the tools and the factors that predict these portions should be further studied. We propose to include into this analysis the quality of the learning goals and the quality of the rationale, the modality of the conversation that can be had about the learning goals, and (perceived) constructive alignment as a starting point. 3) The role of instructor's perceptions of learning goals in assigned learning goals use and acceptance. In our study we focussed on the student perspective, however our and prior findings suggest that instructors may play a significant role in how students perceive, use and accept learning goals (Osueke et al., 2018) and is thus worth the attention.

Conclusions

Assigned Learning Goal Acceptance Theory describes the processes involved in acceptance of assigned learning goals in a Prescribed Study System. Four essential elements were found: 1) the perceived fit of learning goals as a tool with students' study strategies; 2) the level of explicit or implicit acceptance of content of learning goals depending on the student's strategies; 3) the level of acceptance that is based on considerations of usefulness, comprehensibility, and perceived constructive alignment of learning goals within a course; and 4) students' acquiescence to whatever is expected to pass the examination. Assigned Learning Goal Acceptance Theory contributes to understanding and improving learning goal acceptance and offers directions for future research.

Highlights

- The present study offers Assigned Learning Goal Acceptance Theory, a model to understand learning goal acceptance processes of undergraduate students.
- Students see learning goals as a tool that does or does not fit in their personal study strategy
- Acceptance or rejection of learning goal content can happen explicitly or implicitly, depending on the student's strategy
- Acceptance or rejection is based on considerations of usefulness, comprehensibility, and constructive alignment
- In the end students acquiesce to whatever is expected of them to pass the examination