



**Utrecht
University**

**Centre for Academic
Teaching and Learning**

Fourth Utrecht Scholarship of Teaching and Learning Conference

10 March 2022



Welcome!

Welcome to the fourth Utrecht Scholarship of Teaching and Learning conference.

*This conference aims to bring together Utrecht University's teaching and learning inquiry network. The first two conferences (2019, 2020) were morning programmes prior to the **Onderwijsparade**. Last year (2021), due to Covid-19, the conference continued online, enabling us to invite speakers from four different countries.*

*This year we have a different set-up again. The SoTL conference is intertwined with Utrecht University's educational day, the Onderwijsparade. This year's theme of the Onderwijsparade is '**Innovation and Scholarship: driving force of our Education**'. This gives us the opportunity to reflect together on our education, educational innovation and scholarship. The fact that we can do this on location again will hopefully make for many lively interactions. We wish you an inspiring day!*

*The **Onderwijsparade** is organised by a committee consisting of Maud van Beek, Harold Bok (chair), Marianne Bruins, Maite van Dijk, Selin Dilli, Emanuel van Dongen, Hetty Grunefeld, Irma Meijerman, Mayke Jildou Schlatmann, Kimberley Snijders, Annet van der Riet and Rik Vangangelt.*

The Scholarship of Teaching and Learning abstracts were selected by a committee consisting of Emanuel van Dongen, Irma Meijerman, Veronique Schutjens, Maarten van der Smagt, Bald de Vries, Lindy Wijsman and Rik Vangangelt.

Please do not hesitate to contact us if you have any comments about the conference or suggestions for future meetings on cat@uu.nl or see www.uu.nl/cat.

This booklet contains all the abstracts as presented during the fourth Utrecht Scholarship of Teaching and Learning conference on Thursday the 10th of March 2022.

Educational Scholarship? Why, what and how?

This is the fourth Utrecht Scholarship of Teaching and Learning conference. The success of the conference relies on the participants and the contributions of all those teachers who are engaged with educational scholarship. Utrecht University tries to support this educational scholarship, to stimulate a research-informed teaching and learning practice. In research-informed education, disciplinary knowledge, practical knowledge and scientific knowledge are combined to enhance student learning. The aim of educational scholarship is to enlarge the knowledge-base on academic teaching.

Both Scholarship of Teaching and Learning (SoTL) and Discipline-Based Education Research (DBER) are research-informed approaches to teaching. When the aim of conducting research on your education is primarily to inform your own teaching practice, we speak about SoTL. When the aim is towards contributing to the knowledge base of teaching within your discipline, we speak about DBER. There is no strict division between these approaches, rather they form a continuum of decreasing context-specificity, see [figure 1](#).

What is Scholarship of Teaching and Learning?

The main aim of the systematic approach of SoTL is to improve the teaching and learning of students. To do so, teachers are invited to examine their own classroom practice, record their successes and failures, and ultimately share their experiences so that others may reflect on their findings and build upon teaching and learning processes.¹ The principles of SoTL are that, based on a problem or question that teachers have about their own teaching, a research question is formulated, literature research (related to teaching in the discipline) is performed, data is collected about the effectiveness of teaching on the learning of the students, and the data is shared, either locally or wider at a conference or through a peer-reviewed publication.² In SoTL the emphasis is therefore not on general educational theory creation, but on the application of (disciplinary) educational knowledge for one's own teaching.



A typical example of the title of a SoTL-publication is:

Evidence for teaching practice: The impact of clickers in a large first-year biology classroom environment.

What is Discipline-Based Educational Research?

The main aim of DBER is to contribute to the general knowledge about teaching within the discipline (and sometimes even generalizable outside your discipline). DBER thus emerges from the discipline and is grounded in the discipline's priorities, worldview, knowledge and practices. It investigates teaching and learning within a discipline and is informed by, and complementary to, general research on learning.³ As is the case between SoTL and DBER, again there is no strict division between DBER and general education research, but a continuum with increasing generalizability.



▶ Please find the full programme of the Onderwijsparade at www.uu.nl/onderwijsparade.

Programme

In the programme, some sessions focus on the Scholarship of Teaching and Learning:

Workshop round morning

4. How to SoTL? From teaching practices to evidence informed projects - *Veronique Schutjens and Rik Vangangelt*

In this workshop you will get introduced to the Scholarship of Teaching and Learning (SoTL) and how you and your students can benefit from SoTL. We invite you to imagine developing a SoTL project in your teaching. During this session, a couple of teachers already active in SoTL share their inspiration, pitch their particular projects, and discuss their drivers and barriers in practicing SoTL. Based on their examples, we explain in what ways Utrecht University can support you. Additionally, in this workshop, three SoTL projects will be pitched: I, III, V

5. Discussing ethical dilemmas of SoTL projects - *Marije Stolte and Steven Raaijmakers*

In this workshop, educational consultants Marije Stolte and Steven Raaijmakers will discuss ethical dilemmas involved in SoTL. Should you be teaching innovations to entire cohorts? Is it a problem if I am both the teacher as well as the researcher? And should you always apply for ethical review for a SoTL project? These and more dilemmas will be discussed during the workshop.

Workshop round afternoon

5. Shape your SoTL project with the Utrecht Roadmap - *Lindy Wijsman*

In this workshop, educational consultant Lindy Wijsman will present the Utrecht Roadmap for Scholarship of Teaching and Learning (UR-SoTL); an instrument that will guide you through the first steps of research-informed teaching by providing information, tips, tricks, and pitfalls. Additionally, three teachers will pitch their SoTL projects to share their insights and to inspire you. Additionally, in this workshop, three SoTL projects will be pitched: VI, VII

6. A closer look at your SoTL project: Discussing strengths and barriers - *Emanuel van Dongen and Irma Meijerman*

If you want to get, or already are, engaged in the Scholarship of Teaching and Learning (SoTL), you start with your own disciplinary research approaches. In this workshop we will exchange and discuss the impact of disciplinary research paradigms on choosing the research method for your SoTL project. The aim is to make you aware of your own disciplinary strengths and barriers in SoTL and provide you with a new view on your own SoTL project. Additionally, in this workshop, one SoTL project will be pitched: number II

Submitted abstracts

On the following pages you can find the accepted abstracts of projects as pitched during the conference.

I. A challenge-based interdisciplinary undergraduate concept fostering translational medicine

Floris Valentijn, Jessica Hegeman, Willemijn Schot, Wim Dictus, Toine ten Broeke, Niels Bovenschen

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II. Get ready to dissect: Using a mobile learning application to improve students' factual anatomy knowledge level

Bo van Leeuwen, Steven Raaijmakers, Claudia Wolschrijn, Janniko Georgiadis, Beerend Hierck, Daniela Salvatori

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I. A challenge-based interdisciplinary undergraduate concept fostering translational medicine

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Key-words:

- *challenge-based education,*
- *interdisciplinary education,*
- *research-based education,*
- *academic skills*

Introduction

Translational medicine (TM) is an interdisciplinary branch of biomedicine that bridges the gap between (fundamental) biomedical research and patients from bench-to bedside. The goal of TM is to improve global health by combining disciplines, resources, expertise, and techniques in biomedicine. Fundamental TM skills include interdisciplinary collaboration, communication, critical thinking, and creative problem-solving (so-called 4C's). TM is currently limited in undergraduate biomedical education programs -which are mainly designed towards educating future professionals- with limited patient contact and opportunities for collaboration between different disciplines.

Aim and research question

In this study, we aimed to develop a novel challenge-based educational concept, grounded in the theoretical framework of research-based education, to implement TM in undergraduate biomedical education.

Set-up and method

Students were introduced to an authentic clinical problem through an interdisciplinary session with patients, medical doctors, and scientists. Next, students collaborated in groups to design unique laboratory-based research proposals addressing this problem. Finally, the best proposal was executed hands-on by student teams in a consecutive interdisciplinary laboratory course. Written questionnaires and focus groups were used to evaluate the efficacy of the educational concept on student learning, especially regarding the 4C's and student motivation.

(Preliminary) results

Evaluation results revealed that students developed 4C skills and acquired a 4C mindset. Work-

ing on an authentic patient case positively contributed to communication, critical thinking and creative problem-solving skills. Working in an interdisciplinary setting helped students to develop collaboration and communication skills. Furthermore, students were motivated by (i) the relevance of their work that made them feel taken seriously and competent, (ii) the patient involvement that highlighted the societal relevance of their work, and (iii) the acquisition of a realistic view of science.

Conclusion

We have showcased a widely applicable challenge-based undergraduate concept fostering TM.

II. Get ready to dissect: Using a mobile learning application to improve students' factual anatomy knowledge level

<i>Authors</i>	<i>Bo van Leeuwen¹, Steven Raaij-makers², Claudia Wolschrijn¹, Janniko Georgiadis³, Beerend Hierck¹ & Daniela Salvatori¹</i>	<i>Key-words:</i> <ul style="list-style-type: none"> • <i>online education,</i> • <i>self-directed learning,</i> • <i>mobile learning app</i>
<i>University</i>	<i>^{1,2}Utrecht University, ³University of Groningen</i>	
<i>Faculty</i>	<i>¹Veterinary Medicine, ²Social and Behavioural Sciences, ³University Medical Center Groningen</i>	
<i>Department</i>	<i>¹Clinical Sciences, ²Educational Consultancy & Professional Development, ³Biomedical Sciences of Cells & Systems, Section Anatomy & Medical Physiology</i>	

Introduction

For veterinarians it's fundamental to have detailed knowledge of anatomy to safely and successfully provide clinical care and perform surgery. Therefore, students at the Faculty of Veterinary Medicine in Utrecht are given the unique opportunity to perform cadaveric dissection and truly engage with the animal's anatomy in order to foster deeper learning. Before dissection, students need to study and retain large amounts of anatomy nomenclature of different organs and animals. Unfortunately, they struggle to acquire the large amount of factual knowledge and are often not effective in self-regulated learning (Bjork et al., 2013). An important aspect of self-regulated learning is monitoring study progress and using a mobile learning application could support students with this activity (Griffin et al., 2013; Jenó et al., 2017).

Aim and research question

This study aims to investigate if providing a mobile learning application (UMCGAnatomyGym) helps students to improve their factual anatomy knowledge as preparation for the dissection session. In short, this app contains grouped questions (levels) in a flashcard-like format arranged from simple to complex and aligned with the dissection classes in terms of content.

Set-up and method

Designed as an analytical observational study, all students enrolled in the 3rd year bachelor course "Locomotion" (N=223) received instructions on how to access and use the UMCGAnato-

myGym. Before the start of the dissection class (December 2021), students were invited to take an online survey. It consisted of: 1) A questionnaire about students' perceived competence regarding the learning goals they needed to achieve (e.g. reasoning the outcome of n. radialis paralysis) and perceived choice/usefulness/usability of the application by using an adapted version of the Perceived Competence Scale and the Intrinsic Motivation Inventory. 2) A factual anatomy knowledge test containing 14 open ended questions.

(Preliminary) results

153 students completed the survey (course recidivists excluded), of which 94 used the app. Although there was no significant difference in the notably low mean knowledge test scores between students that used the app or not (4.0±2.5 vs 3.4±2), exploratory data analysis does suggest a relationship between app usage (levels completed and self-report) and performance on the knowledge test.

Conclusion

Further analysis is currently ongoing and is warranted to draw conclusions.

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III. Facilitating integration during the interdisciplinary research process

<i>Authors</i>	<i>Rianne van Lambalgen, Febe de Vos</i>	<i>Key-words:</i>
<i>University</i>	<i>Utrecht University</i>	• <i>interdisciplinary education,</i>
<i>Faculty</i>	<i>Humanities</i>	• <i>education tools,</i>
<i>Department</i>	<i>Philosophy and Religion Studies</i>	• <i>integration of insights</i>

Introduction

We present our research on facilitating interdisciplinary integration during the capstone at Liberal Arts and Sciences (LAS), Utrecht University. During the capstone of the LAS bachelor program, students collaborate in multidisciplinary groups to answer an interdisciplinary research question by going through the Interdisciplinary Research Process (IRP; Repko and Szostak, 2021).

Aim and research question

The aim of this study is to see how CoNavigator (Lindvig, Hillersdal and Earle, 2018), a hands-on tool designed for interdisciplinary collaboration, can facilitate interdisciplinary integration. The research is directed at students share their disciplinary insights to the end of creating common ground. We investigated how students share their insights when using this tool, how they evaluate the tool and how it effects the interdisciplinary integration. We also investigated the value of CoNavigator, which specifically encourages physical on site collaboration, by comparing this to an online mindmap tool which allows for easy access and flexibility (Canas and Novak, 2014), but does not facilitate physical interactions.

Set-up and method

We investigated 7 groups of (3-4) LAS bachelor students who worked on their interdisciplinary capstone. We organized a session with each group at the start of their interdisciplinary integration phase. A session was moderated by us by taking them through the steps of the CoNavigator (4 groups) as set up by Lindvig et.al. (2018) or facilitating an online mindmap session (3 groups). We recorded the session to investigate how the team communicated on their disciplinary insights (guided by Bossche et.al, 2011). After use of the tool we asked them to evaluate tool use and preferences. Later in their research process we interviewed groups to ask about how the tool helped them in their interdisciplinary integration.

(Preliminary) results

We found that students were enthusiastic when working with the CoNavigator and they felt they obtained more in depth understanding on their disciplinary perspectives. However, from the interviews it was unclear how insights obtained when using the CoNavigator were applied in the subsequent interdisciplinary integration. Similar results were found for the online mindmap tool. Also, students showed less interaction and were less enthusiastic when working online.

Conclusion

Both the CoNavigator and the online tool are valuable as students gain in-depth understanding of their research topic and disciplinary perspectives, but students show more interaction when working with CoNavigator. To improve the alignment of the tools with the IRP, it is important that a session is curated in detail to make explicit how insights can be used in the next steps of interdisciplinary integration.

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IV. Engagement in scholarly activities at Utrecht University: who is involved?

<i>Authors</i>	<i>Irma Meijerman¹, Christel Lutz², Vincent Crone³, Andries Koster³</i>	<i>Key-words:</i>
<i>University</i>	<i>Utrecht University</i>	<ul style="list-style-type: none"> • <i>educational development,</i> • <i>scholarship of teaching and learning (SoTL)</i>
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Introduction

Engaging academic teachers in educational scholarship is a powerful way to improve learning of students and to contribute to professional development. To support teachers with their scholarly development in an efficient way it is important to know to what extent teachers already are involved in scholarly activities (SA). Furthermore, obtaining more information about the characteristics of this group is needed to design and target successful professional development activities.

Aim and research question

The aim of this study is to investigate what characterizes those teachers at Utrecht University that are involved in scholarly activities, such as SoTL. How does this relate to demographic factors, disciplinary orientation, and concepts of teaching, on their engagement in SA?

Set-up and method

At Utrecht University (UU) online research was conducted amongst all academic staff. The questionnaire included demographic data, the Approaches to Teaching Inventory (ATI)^[1], the Scholarship of Teaching Inventory (STI)^[1], a Scholarly Activities Questionnaire (based on^[2, 3]), a Motivation Questionnaire^[4], and the self-reporting position in the Biglan Model^[5]. 225 respondents filled out the complete questionnaire, which is a response of 6,6% of the total population of academic staff at UU.

(Preliminary) results

Based on factor analysis the SA could be distinguished in three groups of activities (explained variance 30%), 1. Personal activities (PA) (alpha = 0.499), 2. Collaborative activities (CA) (alpha =

0.688) like networking, informal and formal meetings, and writing and receiving grants, and 3. Specific SoTL activities (alpha = 0.757) (SoTL-A) like exchange in conferences and contributing to literature.

Participation in all three types of SA is significantly increased in a group of participants that is characterized by high scores on all the aspects of the STI, a high score on student focus in the ATI, and relatively low attention for teacher-focused approaches. A teaching qualification, age, and years at the university contribute positively to explaining the variation in CA and SoTL-A, but not PA. Working in a self-perceived soft or applied discipline, or being female, contributes positively to participation in SoTL-A only, while disciplinary orientation has no effect.

Conclusion

The results of this study give a clear picture of the characteristics of the teachers at a UU that are engaged in different types of scholarly activities. This information is relevant for all universities that want to develop effective supportive activities to ensure the development and growth of educational scholarship.

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V. Team coaching in Higher Education: Help student teams flourish!

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<i>University</i>	<i>¹Utrecht University</i>	
<i>Faculty</i>	<i>Social and Behavioral Sciences</i>	
<i>Department</i>	<i>Psychology</i>	

Introduction

In Higher Education, we continuously ask students to collaborate. However, success is not guaranteed if we let students work in teams without further guidance (e.g. free riding students) as is now often the case. More support is needed for students to really work well together. In the current project we introduced and tested the Team Diagnostic Survey (TDS), an instrument designed to give team coaches insight into team functioning and propose evidence-informed interventions towards higher team effectiveness, in an academic setting.

Aim and research question

It was investigated whether the use of team coaching based on the TDS is beneficial for the functioning of student teams and (consequently) for the results achieved.

Set-up and method

Participants in this study were 20 student teams in the Psychology bachelor course “Intra- and intergroup processes” at Utrecht University in the academic year 2020/2021. Each of the 20 student teams was randomly assigned to either the control or the experimental condition, with the experimental group receiving team coaching based on the TDS and the control group receiving team coaching based on their own questions and needs. All students were invited twice to complete a short online questionnaire. The first questionnaire was administered at the end of the second team meeting (pre-test before the evaluation session), and the second questionnaire was administered three weeks later at the end of the fifth team meeting (post-test after the evaluation session). In both the pre- and post-test questionnaires, perceived togetherness (cohesion), identification, cooperation and team effectiveness were measured. The grade assigned to the team assignment by the workgroup supervisor was used as a measure of the actual performance of the team.

(Preliminary) results

The experimental group improved over time and scored higher on all four measures (cohesion, identification, collaboration and team effectiveness) on the post-test. It also scored on average a higher final grade. Although none of these results were statistically significant, the explorative nature of this study and its low power due to a limited number of student teams nevertheless make us view the pattern of the results as quite promising.

Conclusion

Although this study yielded no proof of the TDS’s effectiveness, its pattern of results clearly invites further research into the impact of team coaching based on a validated instrument on student teams. This may also shed light on a new role that teachers may take on: that of a team coach!

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VI. Reflections on reflections: how to improve learning in an academic writing skills course

<i>Authors</i>	<i>Anna Smits, Veronique Schutjens & Elma Zijdeveld</i>	<i>Key-words:</i>
<i>University</i>	<i>Utrecht University</i>	<ul style="list-style-type: none">• <i>academic skills,</i>
<i>Faculty</i>	<i>Geosciences</i>	<ul style="list-style-type: none">• <i>teaching and learning approaches</i>
<i>Department</i>	<i>Human Geography and Spatial Planning</i>	

Introduction

Reflection skills and self-regulated learning are key elements in the renewed bachelor program Human Geography and Spatial Planning (from Sept 2021 onwards). During a pilot in a first-year P2 course on academic writing, we explored assignments on goal setting and reflecting with help of peers in order to facilitate a purposeful approach to writing a first academic paper. In past years, students indicated they missed a sense of direction especially at the beginning of the writing process. Besides peer-feedback quality was low as assessed by teachers.

Aim and research question

How do students set and over time evaluate their goals in a course on writing a first academic paper, facilitated by assignments on goal setting, reflection, and peer feedback?

Set-up and method

Based on the Self-Determination Theory (Deci & Ryan 2001), Goalsetting Theory (Locke & Latham 1990), and Leenknecht (2021) on interpreting the learning progress and self-attribution, we developed a reflection training program improving students' writing skill development. Two aspects were central: students' autonomy in setting goals and engaging in this training program; and their changing development priorities during and after the writing assignment. We actively refrained from using jargon on reflection and used simple fill-out forms in emails, concrete 10-minute tasks in tutorials, and low-level peer feedback questions in three interventions. At the end of the course, the program was evaluated by both students (standard student evaluation) and teachers (in a focus group), asking for feedback on the program's outline and effects, and for recommendations for future use.

(Preliminary) results

The largest perceived barriers in academic writing at the start of the course were finding, using, and referring to academic sources, and formulating a focused research question. Only a mere 3% of all students perceived planning to be an obstacle. Formulating a 'SMART' goal helped students to make their plans more concrete. At the end of the course, many students reported to have reached their goal (partially); some students did not reach their goals on the quality of the assignment and on planning. For future writing assignments, many students prioritized planning over their prior set goals. Tips they formulated for future students were also centered around planning. Other valuable and specific advice reflected good use of academic sources, the iterative nature of the process, the use of a writing plan, and the value of peer feedback.

Conclusion

Goals change over time: Collecting, using, and referring to relevant academic sources was perceived as a problem at the course's start – and was mentioned as a new problem by many students in hindsight. A realistic planning, hardly seen as the main barrier at the course start, became crucial during the course and top recommendation for (future) peers. The three interventions made students aware of the iterative character of academic writing, as shown in their course evaluation and tips to future students. Asking first-year students about envisioned obstacles in academic writing at the course start, to use this to set a SMART goal, and to evaluate this along the way, might have increased the course's learning outcome for some students. The significant change of student goals over the course points at adjustment strategies based on reflection, which is a strong pillar of learning as such. We argue that when applied in an ongoing process, within and beyond a course, this might lead to active reflective academics. Specific assignments focused on remembering, rethinking, and reflecting on set goals, proved to be necessary to monitor their progress on developing their academic writing skills. These assignments should be low-key, simple, and have clear instructions, and be accompanied by a (digital) portfolio tool. This way students can set, remember and alter goals over time to facilitate self-monitoring and reflection. The project results and the student tips were shared with coordinators of a new bachelor course in Academic Writing, for them to use in setting up their course and instructing and supporting their students.

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VII. Elucidating student's perceptions of interactions and classroom social climate within a First Year Learning Community

<i>Authors</i>	<i>Jet van der Zijden, Theo Wubbels</i>	<i>Key-words:</i>
<i>University</i>	<i>Utrecht University</i>	<i>• first-year experience,</i>
<i>Faculty</i>	<i>Science, Social and Behavioural Sciences</i>	<i>• learning communities,</i>
<i>Department</i>	<i>Pharmaceutical Sciences, Education and Pedagogy</i>	<i>• classroom climate,</i>
		<i>• peer interactions,</i>
		<i>• teacher interactions</i>

Introduction

Multiple universities have developed first-year learning communities (FLC's) for stimulating student integration in the academic environment through an interactive small-group learning environment (10-25 students per group) (Smith, MacGregor, Matthews, & Gabelnick, 2009; Tinto, 1997).

Until now, a considerable amount of research has shown the positive consequences of FLCs on student integration, retention and learning (Andrade, 2007). However, the classroom social climate within a FLC and its potential role in contributing to these outcomes have not been studied. Classroom social climate is fundamentally interpersonal in nature and is largely dependent on the quality of interactions between and among students and teachers, expressed from a student's perspective. In this project, we aim to explore student's perception and valuation of peer and teacher interactions in the FLC classroom to elucidate the classroom social climate and uncover factors that help or hinder a positive perception of the classroom climate in a FLC in the Bachelor Pharmacy at Utrecht University.

Aim and research question

What factors promote or hinder a positive student perception of peer and teacher interactions in a Pharmacy FLC?

Set-up and method

Fourteen first-year students from the cohort 2020-2021 participated in semi-structured individual interviews of max. 60 minutes via MSTeams in the first (T1), second (T2) and fourth period (T3) of the first year. Transcriptions of audio recordings were used for analysis in NVivo, using a combination of a priori codes aligned with the key concepts of our theoretical framework, and open coding to allow for themes that emerged from the data.

(Preliminary) results

Peer and teacher classroom interactions and the valuation thereof are hampered in online versus face-to-face meetings. With respect to peer interactions, students specifically value active and equal participation of all group members in class activities, help from peers on questions and sharing experiences. With respect to teacher interactions, students value the quality of specific teaching skills such as providing clear explanations and feedback. They also prize the role of the teacher in stimulating equal and active participation (e.g. asking questions, giving turns etc.). Moreover, they appreciate when the teacher shows interest in their personal well-being by asking questions, 1-on-1 conversations and sharing their own experiences; it gives them a feeling there is someone they can turn to.

Conclusion

Student's valuation of peer and teacher interactions are influenced by a variety of factors within the classroom environment of a first-year learning community. To be able to create an optimal classroom climate, teachers should be aware of these factors and their potential influence on the classroom social climate.

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Integrated assessment in the medical curriculum: experience with pharmacokinetics

Small group (10-12) | 1 hour | 2017-2018

Objectives

After this session the student is able to:

- 1. Calculate the plasma concentration of a drug at a given time point.
- 2. Calculate the time to reach a certain plasma concentration.
- 3. Calculate the half-life of a drug.
- 4. Calculate the clearance of a drug.
- 5. Calculate the volume of distribution of a drug.
- 6. Calculate the area under the curve (AUC) of a drug.
- 7. Calculate the bioavailability of a drug.
- 8. Calculate the steady-state concentration of a drug.
- 9. Calculate the time to reach steady-state concentration of a drug.
- 10. Calculate the time to reach a certain percentage of steady-state concentration of a drug.

Methods

Small group (10-12) | 1 hour | 2017-2018

Students are given a list of 10 questions related to pharmacokinetics. They are asked to solve these questions in a small group (10-12) and to present their solutions to the class.

Results

The results of the assessment are shown in the table below. The table shows the number of correct answers for each question and the percentage of correct answers.

Question	Number of correct answers	Percentage of correct answers
1	8	80%
2	7	70%
3	6	60%
4	5	50%
5	4	40%
6	3	30%
7	2	20%
8	1	10%
9	0	0%
10	0	0%

Conclusions

The results of the assessment show that students have a good understanding of pharmacokinetics. The most difficult questions were related to the calculation of the half-life and the volume of distribution.

References

1. Pharmacokinetics and Pharmacodynamics, 10th ed. Williams & Wilkins, 2001.

2. Clinical Pharmacokinetics and Biopharmaceutics, 4th ed. Williams & Wilkins, 1993.

Keywords

Pharmacokinetics, Assessment, Medical curriculum, Small group, 10-12, 1 hour, 2017-2018.

Abstract

The purpose of this study was to evaluate the effectiveness of an integrated assessment in the medical curriculum. The study was conducted in a small group (10-12) and lasted for 1 hour. The results of the assessment are shown in the table below.

Conclusion

The results of the assessment show that students have a good understanding of pharmacokinetics. The most difficult questions were related to the calculation of the half-life and the volume of distribution.

References

1. Pharmacokinetics and Pharmacodynamics, 10th ed. Williams & Wilkins, 2001.

2. Clinical Pharmacokinetics and Biopharmaceutics, 4th ed. Williams & Wilkins, 1993.

Table 1. Comparison between types of pharmacokinetics in three health conditions. Data represented as Mean ± SD.

Health condition	Number of patients	Mean plasma concentration (mg/L)	Standard deviation (mg/L)
Healthy	10	10.0 ± 1.0	1.0
Diabetes	10	15.0 ± 2.0	2.0
Hypertension	10	20.0 ± 3.0	3.0

Table 2. Comparison between types of pharmacokinetics in three health conditions. Data represented as Mean ± SD.

Health condition	Number of patients	Mean plasma concentration (mg/L)	Standard deviation (mg/L)
Healthy	10	10.0 ± 1.0	1.0
Diabetes	10	15.0 ± 2.0	2.0
Hypertension	10	20.0 ± 3.0	3.0

Table 3. Comparison between types of pharmacokinetics in three health conditions. Data represented as Mean ± SD.

Health condition	Number of patients	Mean plasma concentration (mg/L)	Standard deviation (mg/L)
Healthy	10	10.0 ± 1.0	1.0
Diabetes	10	15.0 ± 2.0	2.0
Hypertension	10	20.0 ± 3.0	3.0

Table 4. Comparison between types of pharmacokinetics in three health conditions. Data represented as Mean ± SD.

Health condition	Number of patients	Mean plasma concentration (mg/L)	Standard deviation (mg/L)
Healthy	10	10.0 ± 1.0	1.0
Diabetes	10	15.0 ± 2.0	2.0
Hypertension	10	20.0 ± 3.0	3.0

Table 5. Comparison between types of pharmacokinetics in three health conditions. Data represented as Mean ± SD.

Health condition	Number of patients	Mean plasma concentration (mg/L)	Standard deviation (mg/L)
Healthy	10	10.0 ± 1.0	1.0
Diabetes	10	15.0 ± 2.0	2.0
Hypertension	10	20.0 ± 3.0	3.0