



HRK nexus
2016

Inverted
Classes

JG|U

Inverted Classroom

Richtig flippen.

Dr. Malte Persike



persike@uni-mainz.de



methodenlehre.com



twitter.com/methodenlehre



[methodenlehre.com/g+](https://plus.google.com/methodenlehre.com/g+)



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JG|U

Up & Coming

Intro.

Flipped
Classroom.
Empirische Evidenz

Präsenz.
Die Studierendenseite

Online.
Die Lehrendenseite

Fazit.

Inverted Classrooms

Spring 2016

Dr. Matthias Frey

1. Inverted Classrooms

2. Inverted Classrooms

3. Inverted Classrooms

4. Inverted Classrooms



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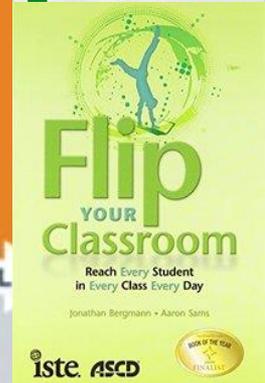
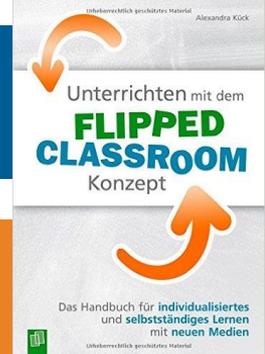
Präsenz.
Die Studierendenseite

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Quelle: <http://ctl.utexas.edu/sites/default/files/flippedgraph>





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Flipped Classroom

Erwartungen...

- ⊕ Motivation und Engagement erhöhen
- ⊕ Interaktion fördern
- ⊕ Wissen und Kompetenzen vertiefen
- ⊕ Behaltensleistung verbessern





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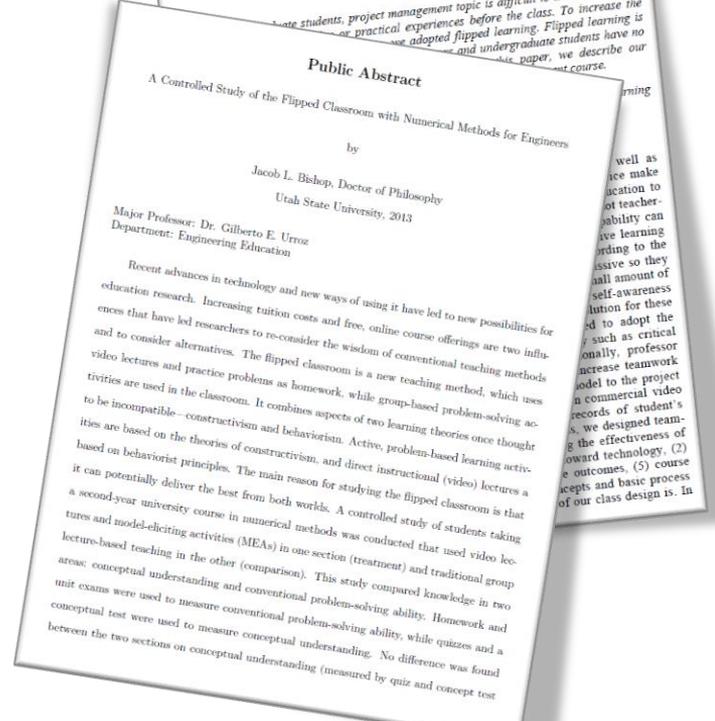
Online.
Die Lehrendenseite

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... und Effekte

Workload, gemessen als Zeitlast, steigt signifikant an, zum Teil um mehr als 100%.





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... und Effekte

Lehrevaluation

verändert sich wenig,
Studierende sind eher
zufriedener.



CBE—Life Sciences Education
Vol. 14, 1–12, Spring 2015

Article

Improvements from a Flipped Classroom May Simply Be the Fruits of Active Learning

Jamie L. Jensen,* Tyler A. Kummer,* and Patricia D. d. M. Godoy†
Lagoa Nova, Natal, Rio Grande do Norte 59056-003, Brazil

*Department of Biology, Brigham Young University, Provo, UT 84602; †Health School, Universidade Potiguar,
Monsenhor Taborda, Natal, Rio Grande do Norte 59056-003, Brazil
Submitted August 20, 2014; Revised September 26, 2014; Accepted September 27, 2014
Monitoring Editor: Mary Pat Wenderoth

The “flipped classroom” is a learning model in which content attainment is shifted forward to outside of class, then followed by instructor-facilitated concept application activities in class. Current studies on the flipped model are limited. Our goal was to provide quantitative and controlled data about the effectiveness of this model. Using a quasi-experimental design, we compared an active flipped classroom with an active flipped classroom, both using the 5-E learning cycle, in an effort to vary only the role of the instructor and control for as many of the other potentially influential variables as possible. Results showed that both low-level and deep conceptual learning were equivalent between the conditions. Attritional data revealed equal student learning was equivalent in their learning than what they did at home. We conclude that the flipped classroom does not result in higher learning gains or better attitudes compared with the nonflipped classroom when both utilize an active-learning, constructivist approach and propose that learning gains in either condition are most likely a result of the active-learning style of instruction rather than the order in which the instructor participated in the learning process.

INTRODUCTION

Technological advances have impacted almost every facet of modern culture; education is no different. As new technologies become available, they are often embraced in education. One “flipped classroom” is an attempt to enhance traditional instruction. This is a learning model in which content attainment is shifted forward to outside of class in an online format and then followed by teacher-facilitated concept application activities in class. This model has gained such popularity across the country that there is now a Flipped Learning Network with more than 12,000 member educators that supports educators

wanting to implement a flipped strategy in their classrooms. It is especially popular among K–12 educators, 40% of whom reported a desire to try the flipped model this coming academic year in the Speak Up online survey (Project Tomorrow, 2013). Even in higher education, the flipped classroom is gaining significant ground, being implemented on college campuses across the country. Learning models and others offer a definition: “In the flipped large group learning space and move it into the individual learning space, with the help of one or several technologies” (Harvard et al., 2013, p. 4). Many researchers have put forth to shift the attainment of content before class in the form of instructional videos, recorded lectures, and other remotely accessed instructional items. Then, instructors spend in-class time applying the material through complex problem solving, deeper conceptual coverage, and peer instruction (Strayer, 2012; Tucker, 2012; Collier, 2013; Sarawagi, 2013). Sarawagi (2013) suggests that it is defined by facilitating low-level (terms, definitions, and basic content) learning outside class and high-level (application-based) learning within class. According to the constructivist, inquiry-based, learning cycle model (Fleiss et al., 1953; Bybee, 1993; Lawson, 2002),

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Address correspondence to Jamie L. Jensen (jensen@jensenlab.byu.edu).
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Downloaded from <http://www.lifescied.org/> by guest on May 2, 2015



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Vol. 9, No. 2, June 2013

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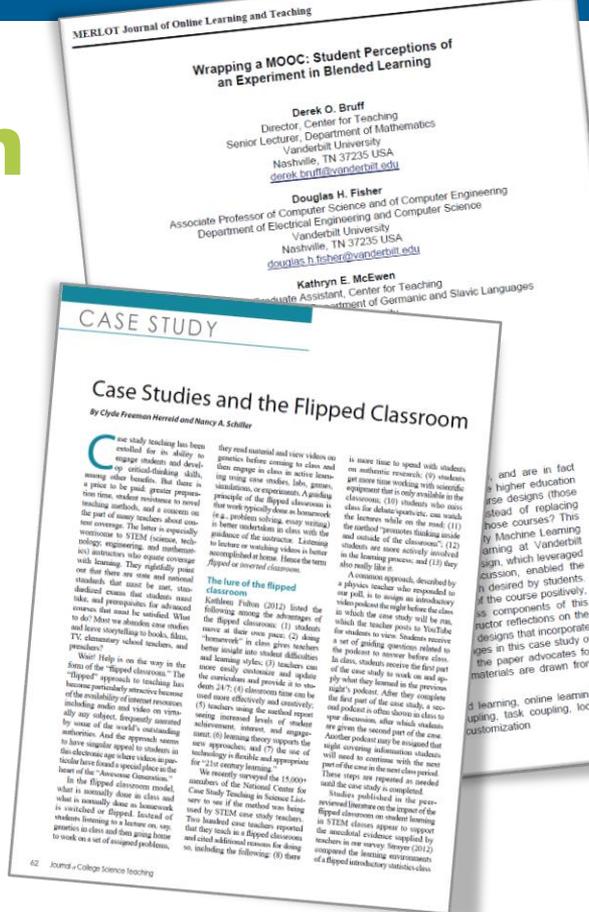
Die Lehrendenseite

Fazit.

Flipped Classroom

... und Effekte

Flexibilität der räumlichen und zeitlichen Lernsituation wird geschätzt.



MERLOT Journal of Online Learning and Teaching

Wrapping a MOOC: Student Perceptions of an Experiment in Blended Learning

Derek O. Bruff
Director, Center for Teaching
Senior Lecturer, Department of Mathematics
Vanderbilt University
Nashville, TN 37235 USA
derek.bruff@vanderbilt.edu

Douglas H. Fisher
Associate Professor of Computer Science and of Computer Engineering
Department of Electrical Engineering and Computer Science
Vanderbilt University
Nashville, TN 37235 USA
douglas.h.fisher@vanderbilt.edu

Kathryn E. McEwen
Graduate Assistant, Center for Teaching
Department of Germanic and Slavic Languages

CASE STUDY

Case Studies and the Flipped Classroom

By Clyde Freeman Hevred and Nancy A. Schiller

Case study teaching has been credited for its ability to engage students and develop critical-thinking skills, to point to be paid greater preparation time, modern students to novel the part of many teachers about constructive to STEM (science, technology, engineering, and mathematics) instructors who equate coverage with learning. They regularly praise that there are one and several decades cases that students need to do. Most we already use (video, TV, elementary school students, and presenters).

What helps is on the way in the "flipped" classroom. The because particularly structured because of the probability of content resources by some of the world's outstanding universities. And for approach seems to have singular appeal to students at their have found a special place in the "flipped classroom" model, what is normally done in class and students learning to learn on, say, generation in class and then going home to work on a set of assigned problems, they read content and view videos on their engage in class in active learning using case studies, lab, group, simulation, or experiment. A finding that work typically done in homework is better undertaken in class with the to lecture or reading video in lecture accomplished at home. Hence the term flipped or inverted classroom.

The core of the flipped classroom. Kathleen Fishon (2012) listed the following among the advantages of moving a class over pace: (1) student "homework" in class gives teachers and learning styles; (2) doing better insight into student difficulties; (3) teachers can more easily coordinate and update content; (4) classroom time can be used more effectively and creatively, seeing increased levels of student achievement, interest, and engagement; (5) learning theory supports the technology is flexible and appropriate for 21st century needs and approaches. We recently surveyed the 15 (2009) Case Study Teaching in Science Course members of the National Center for Science to use of the methods on being used by STEM case study teachers. Two hundred case study teachers, that they teach in a flipped classroom, and cited additional reasons for doing so, including the following: (1) there is more time to spend with students on authentic research; (2) students get more time reading with scientific equipment that is only available in the classroom; (3) students who miss the class for other reasons can watch the lecture while on the road; (4) the fact that students are more engaged in the learning process, especially after they also study like it.

A common approach, described by a physics teacher who responded to our poll, is to assign an introductory video packet the night before the class in which the case study will be run, which the teacher posts to YouTube for the students to view. Students receive the packet to answer before class. In the case, students receive the first part of the case study to work on and reply what they learned in the previous night's packet. After the very complete and packet is often shown in class to answer questions, after which students are given the second part of the case, night covering information students will need to continue with the next part of the case in the next class period. These steps are repeated as needed until the case study is completed. Studies published in the peer-reviewed literature on the impact of the flipped classroom on student learning in STEM courses appear to support the anecdotal evidence supplied by our teachers in our survey. Strayer (2012) compared the learning environments of a flipped introductory neuroscience



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... und Effekte

Leistung verbessert sich.

Oder auch nicht.



WIRED CAMPUS
The latest news on tech and education.

PREVIOUS
— QuickWire: Acronymy Accompanies Dickinson Papers to Online Archive

QuickWire: Company News About Peer Review, Assessment, and Language Instruction →

QuickWire: 'Flipping' Classrooms May Not Make Much Difference

October 22, 2013, 3:11 pm



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... und Effekte

Zwischenfazit:

limited direct evidence

„there is much indirect evidence [...] of improved academic performance and student and staff satisfaction”



1. Funding: This research received no specific grants from any funding agency in the public, commercial or not-for-profit sectors.
2. Corresponding author at: University of South Australia, School of Pharmacy and Medical Sciences, City East Campus, North Terrace, Adelaide SA 5000, Australia. Tel.: +61 8 8302 2048; fax: +61 8 8302 1262. E-mail address: jacqueline.oleary@unisa.edu.au (J. O'Leary).

higher education globally, forming the cornerstone of curriculum design and providing opportunity for learning not previously possible or available to students (Lajoie, Platteau, & Terrell, 2000). Reflecting this is the rise of the flipped classroom or inverted classroom (Lajoie & Platteau, 2000), first popularized in secondary education in the United States (Bergman & Sams, 2009).
The flipped classroom paradigm has recently emerged from K-12 education (Ahn, 2012). Most descriptions of the flipped classroom suggest that multimedia lectures be recorded so students can view them out of class and in their own pace (homework). This asynchronous learning approach gives up in-class time for student-centred synchronous learning activities. Advocates in K-12 recommend a range of in-class activities that including individual practice (e.g. completing math problems) or that the teacher can thereby provide individualized help or large-scale inquiry projects (Prober & Khan, 2013). In higher education courses it has been suggested that class time should focus on knowledge application (Phelan, Richards & Mumford, 2013). It may also allow the teacher a better opportunity to detect errors in thinking.
It could be argued that the flipped classroom has been in existence within the broader educational sphere for a number of years, through the requirement of students having to complete a deeper level (Sanyal, 2012). Flipped classrooms take what was previously class content (teacher led instruction) and replace it with what was previously homework (assigned activities to complete) now taking place within the class (Phelan & Mumford, 2012). In addition, the flipped classroom fosters student ownership of learning through the completion of preparatory work and being more interactive during actual class time. Proponents of flipped classrooms suggest that this pedagogical approach is advantageous for a number of reasons: it allows students to learn at their own pace and that



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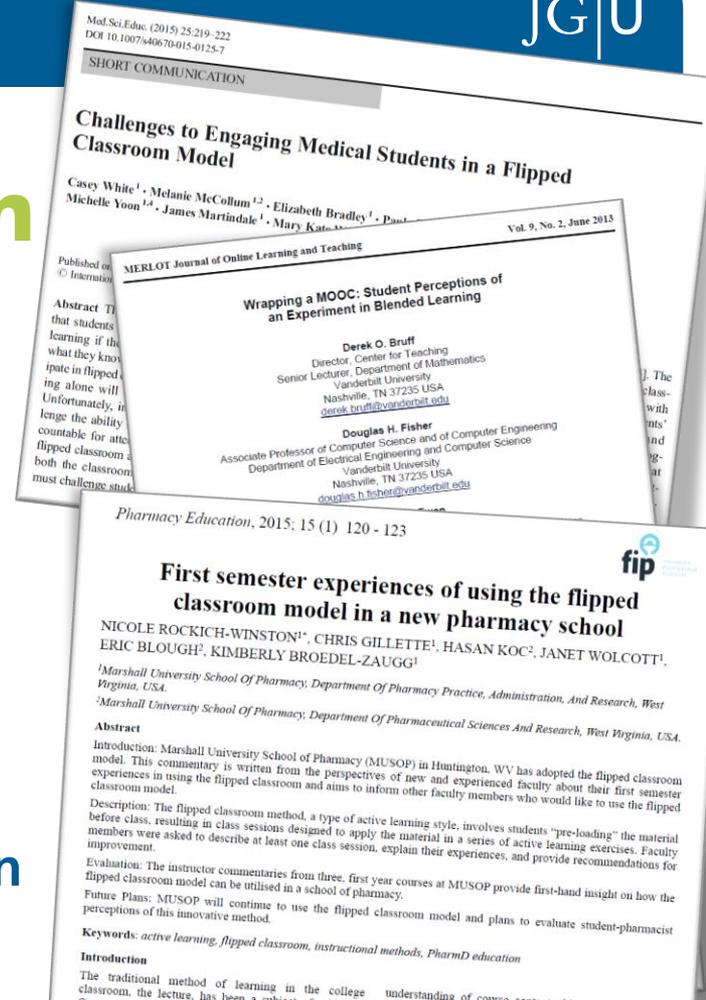
Wo liegen die Probleme?

⊕ **Adhärenz** der Studierenden

⊕ **Brüche** zwischen Online- und Präsenzteilen

⊕ **Erwartungen** sind nicht klar

⊕ Schlechte **Betreuungsrelation**





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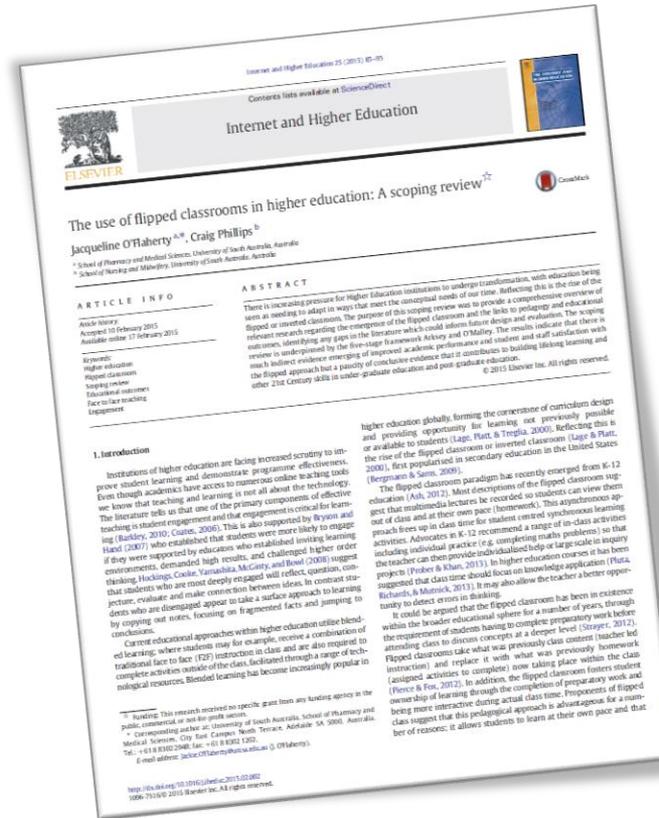
Die Lehrendenseite

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Flipped Classroom

Wo liegen die Probleme?

„offloading content and
engaging students [...] is more important than the
specific resources used for
flipping”





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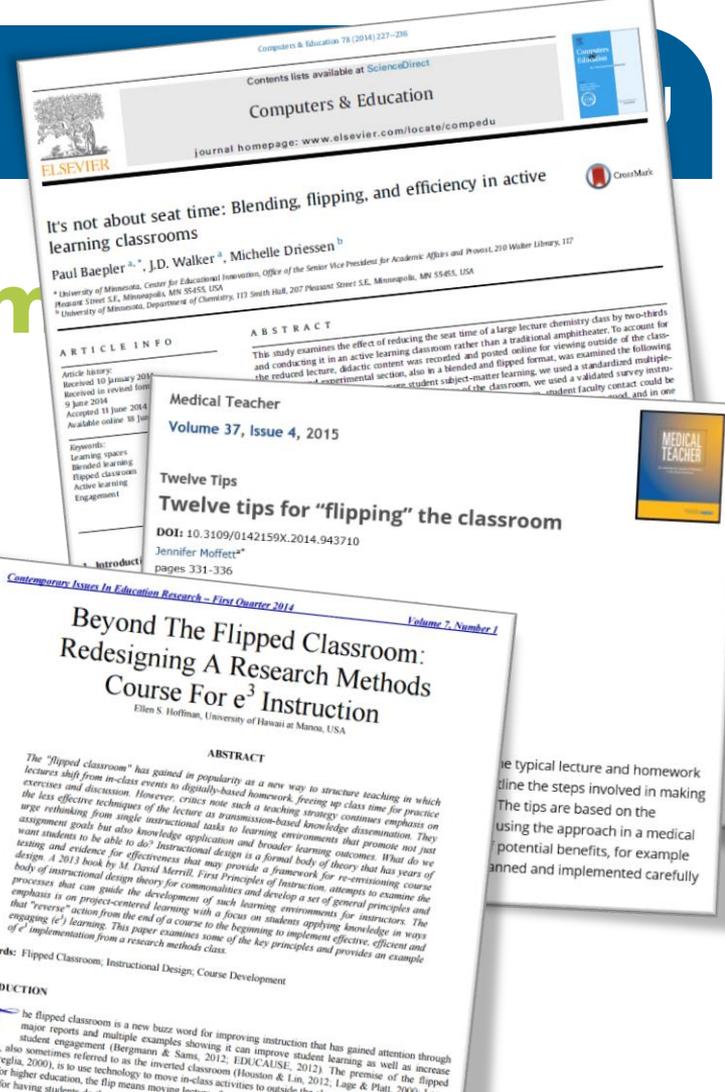
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Flipped Classroom

Wo liegen die Probleme?

Der Erfolg des Inverted Classroom entsteht aus der **didaktisch sinnvollen** Verschränkung zwischen Online- und Präsenzphase.



...the typical lecture and homework
...line the steps involved in making
...The tips are based on the
...using the approach in a medical
...potential benefits, for example
...anned and implemented carefully



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Die Präsenzphase

Mit den Studierenden arbeiten



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Die Onlinephase

Für die Studierenden arbeiten



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Online-Lernmaterialien

Lernmedien für den Flipped Classroom



Klassische Lernmedien

Digitale Texte, Folien, Wissensdatenbanken



Lernvideos

Eigen- oder Fremdproduktion



Soziale Netzwerke

Facebook, Foren, Wissenscommunities



e-Assessments

Elektronische Prüfungssysteme



Komplexere Tools

Simulationen, Captivate



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Videoformate

Format 0: Professionelle Studioproduktion

<http://research.microsoft.com/tuva>





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Online-Lernmaterialien

Video für den Flipped Classroom



medienzentrum
Universität Mainz

G|LK

- ⊕ Die Universität Mainz fördert 2014 und 2015 insgesamt 10 Produktionen Offener Online Kurse mit je 20.000,- €
- ⊕ Dabei wurde u.a. der **Workload der Dozierenden** wöchentlich erhoben

LOOK
Lehre Offene Online Kurse



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Zeitaufwand

Video für den Flipped Classroom

Online Course

Scripting, Vorbereitung

Aufnahme

Postproduktion

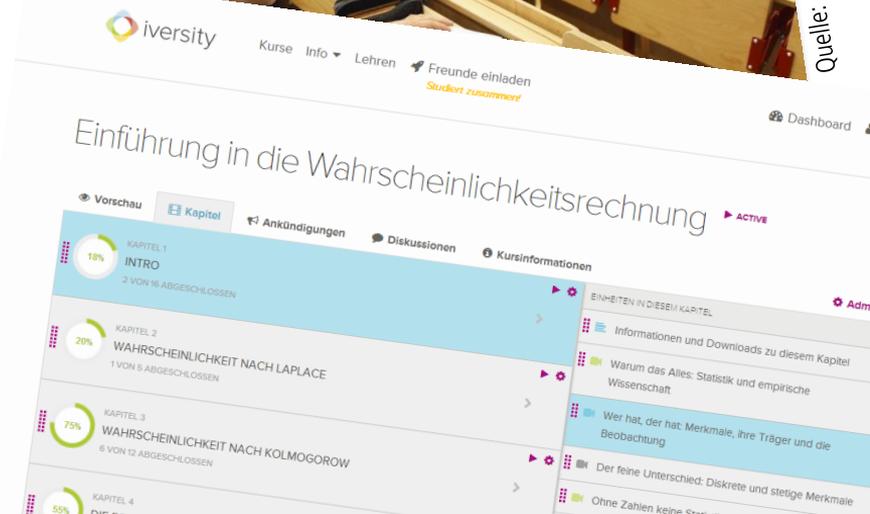
Zusatzmaterialien

Publikation

Wartung & Pflege



Quelle: JGU Mainz





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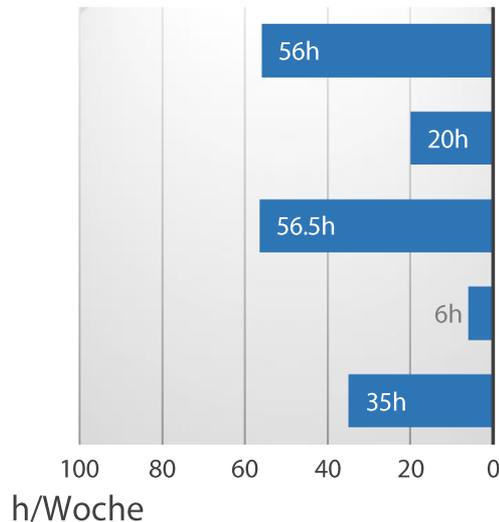
Zeitaufwand

Video für den Flipped Classroom

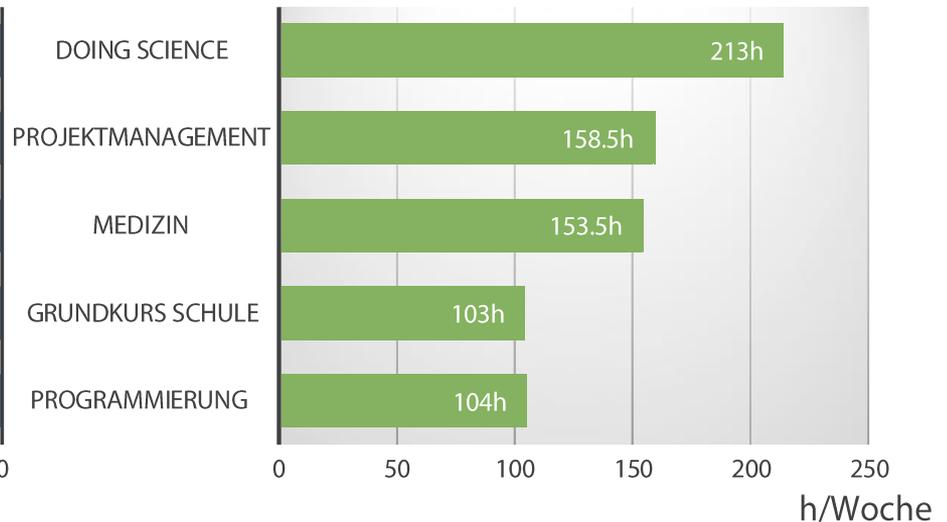
Im Mittel 7.1 h/Woche

(Grad der Fertigstellung: < 50%)

WiSe 14/15



SoSe 2015





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Video für den Flipped Classroom

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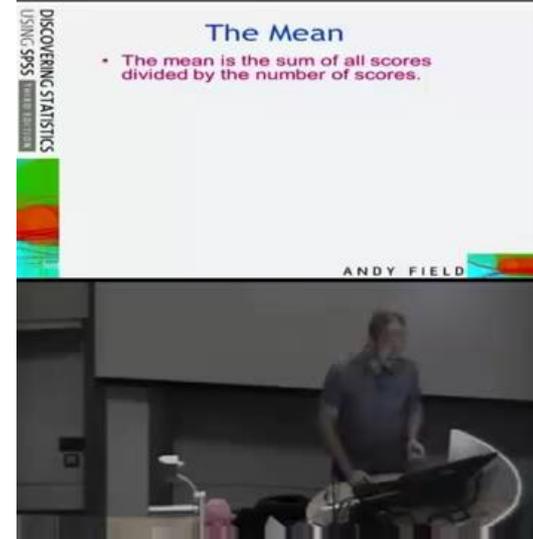
Videoformate

Format 1: Vorlesungsaufzeichnung

⊕ **Festinstallation**
der Technik

⊕ **90minütige**
Videos

⊕ (Automatisches)
Authoring



Eignung für Inverted Classroom



Aufwand für die Aufnahme



Aufwand für die Postproduktion



Delegierbarkeit des Aufwandes



Professionalität des Ergebnisses





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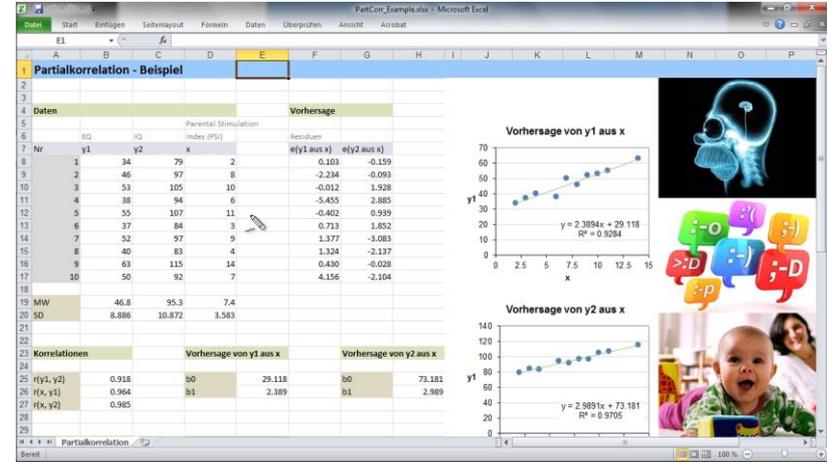
Videoformate

Format 2: Screencast

⊕ Aufnahme
Zuhause / im Büro

⊕ 5-10minütige
Videos

⊕ moderate
Postproduktion



Eignung für Inverted Classroom



Aufwand für die Aufnahme



Aufwand für die Postproduktion



Delegierbarkeit des Aufwandes



Professionalität des Ergebnisses





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Videoformate

Format 3: Screencast mit kurzen
Sprechervideos

⊕ Screencast +
Studioaufnahme

⊕ **5-10minütige**
Videos

⊕ erhöhte
Postproduktion



Eignung für Inverted Classroom	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
Aufwand für die Aufnahme	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Aufwand für die Postproduktion	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Delegierbarkeit des Aufwandes	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Professionalität des Ergebnisses	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>



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Videoformate

Format 4: Legetrick

⊕ Dezidierte
Aufnahmetechnik

⊕ **2-5minütige**
Videos

⊕ erhebliche
Postproduktion



Eignung für Inverted Classroom	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
Aufwand für die Aufnahme	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Aufwand für die Postproduktion	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Delegierbarkeit des Aufwandes	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Professionalität des Ergebnisses	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>



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Empfehlung

Video für den Inverted Classroom



Einfache Screencasts

Aufwandsarm. Pflegeleicht. Rezipientenfreundlich.



Screencasts mit Sprechervideo

Professionellere Anmutung. Höherer Aufwand. Höhere Akzeptanz.