Social affordances, social presence and sociable online learning environments: A study of the SIPS model in action

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A few quick words about my institution and me

- Distance University in Hagen
- Founded in 1974
- Largest University in Germany
- 74.000 Students

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- Distance University in Hagen
- Founded in 1974
- Largest University in Germany
- 74.000 Students

- Research Assistant since Nov. 2013
- Department of Instructional Technology & Media
- PhD student since Aug. 2015

What's the problem?

Students in Online/Distance Learning often study under conditions of relative social isolation

(Rovai & Wighting, 2005; Boling, Hough, Krinsky, Saleem, & Stevens, 2012; Symeonides & Childs, 2015; Stürmer, Ihme, Fisseler, Sonnenberg, & Barbarino, 2018)

What's the problem?

Learning environments in Online/Distance Learning are often not *sociable*, but *aloof*

Boling et al. (2012):

> „In courses that offered little to no interaction with others, students reported feeling disconnected with their instructors, the course content, and their fellow classmates. The majority of participants' online experiences reflected experiences that fit this model (p.120)"

Boling, E. C., Hough, M., Krinsky, H., Saleem, H., & Stevens, M. (2012). Cutting the distance in distance education: Perspectives on what promotes positive, online learning experiences. *The Internet and Higher Education*, *15*(2), 118-126.

What's the problem?

Learning environments in Online/Distance Learning are often not *sociable*, but *aloof*

Symeonides & Childs (2015):

> „[…] feelings of trepidation and 'not really knowing who you're talking to' made participants reluctant to interact. These findings do not support the pedagogical enthusiasm for the ease and abundance of CMC online learning (p.543)"

Symeonides, R., & Childs, C. (2015). The personal experience of online learning: An interpretative phenomenological analysis. *Computers in Human Behavior*, *51*, 539-545.

The SIPS model

- *Sociability*

- Social *Interaction*
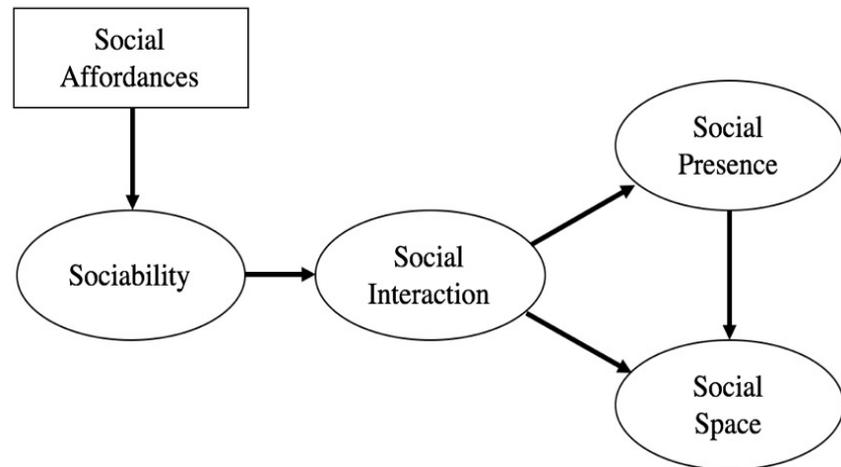
- Social *Presence*

- Social *Space*

Kreijns, K., Kirschner, P. A., & Vermeulen, M. (2013). Social aspects of CSCL environments: A research framework. *Educational Psychologist*, *48*(4), 229-242.

Weidlich, J., & Bastiaens, T. J. (2017). Explaining social presence and the quality of online learning with the SIPS model. *Computers in Human Behavior*, *72*, 479-487.

What makes for a sociable learning environment?

e.g. what is sociability?

Sociable learning environments <u>feel like</u> spontaneous communication and interaction is possible.
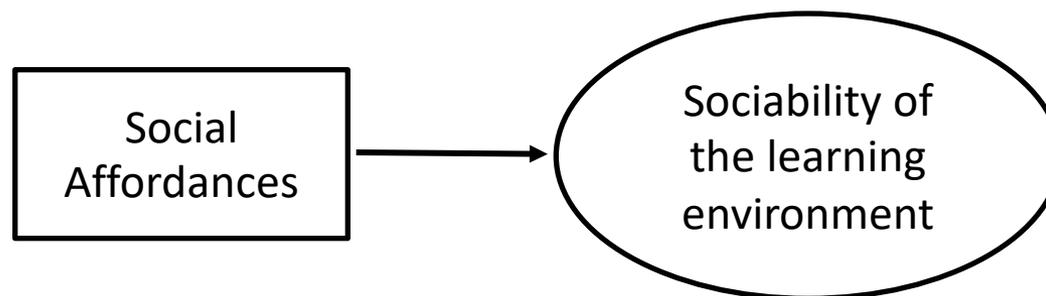
Sociability of the learning environment

What makes for a sociable learning environment?

e.g. what is sociability?

Sociable learning environments have tangible elements that allow for and facilitate spontaneous and informal social interaction, especially in the socio-emotional dimension

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┌─────────────────┐            ╭─────────────────╮
│                 │           ╱  Sociability of   ╲
│     Social      │─────────▶│   the learning      │
│   Affordances   │           ╲  environment       ╱
│                 │            ╰─────────────────╯
└─────────────────┘
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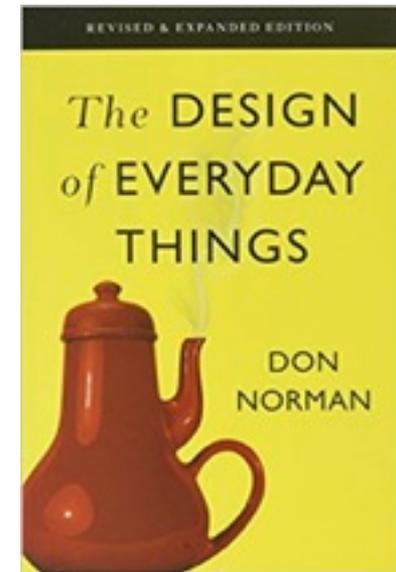
What are Affordances?

James Gibson, 1977

Don Norman, 1988

- Action possibilities for an agent

- Inviting certain behaviors

- Suggesting behavioral patterns

- Ecological approach

Withagen, R., de Poel, H. J., Araújo, D., & Pepping, G.-J. (2012). Affordances can invite behavior: Reconsidering the relationship between affordances and agency. *New Ideas in Psychology, 30*(2), 250-258.

What are Social Affordances?

Elements or properties of the learning environment, that:

- stimulate informal and casual conversation,

- stimulate impromptu encounters

- bridge the 'time gap' imposed by asynchronicity

Kreijns, C. J. (2004). *Sociable CSCL environments: social affordances, sociability, and social presence* (Doctoral dissertation, Open Universiteit Nederland).
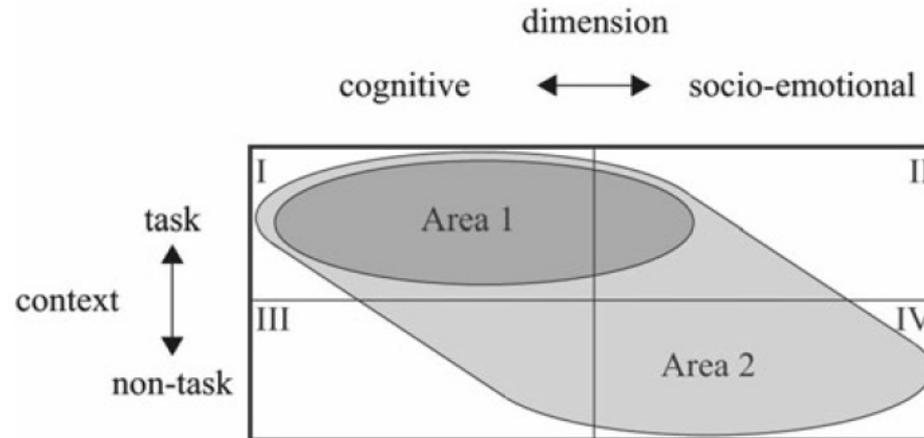
SIPS
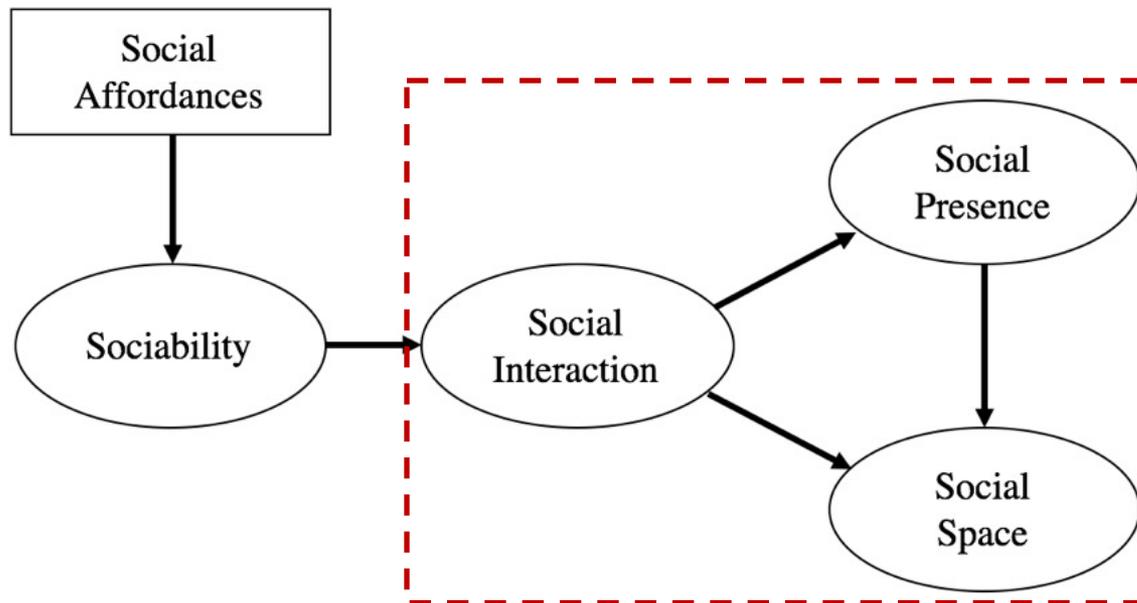
Weidlich, J., & Bastiaens, T. J. (2017). Explaining social presence and the quality of online learning with the SIPS model. *Computers in Human Behavior*, *72*, 479-487.

What is Social Interaction?

Social interaction (or student-student interaction) is the process of communicating and exchanging messages with peers in the learning environment.

Kreijns, K., Kirschner, P. A., & Vermeulen, M. (2013). Social aspects of CSCL environments: A research framework. *Educational Psychologist*, *48*(4), 229-242.

SIPS

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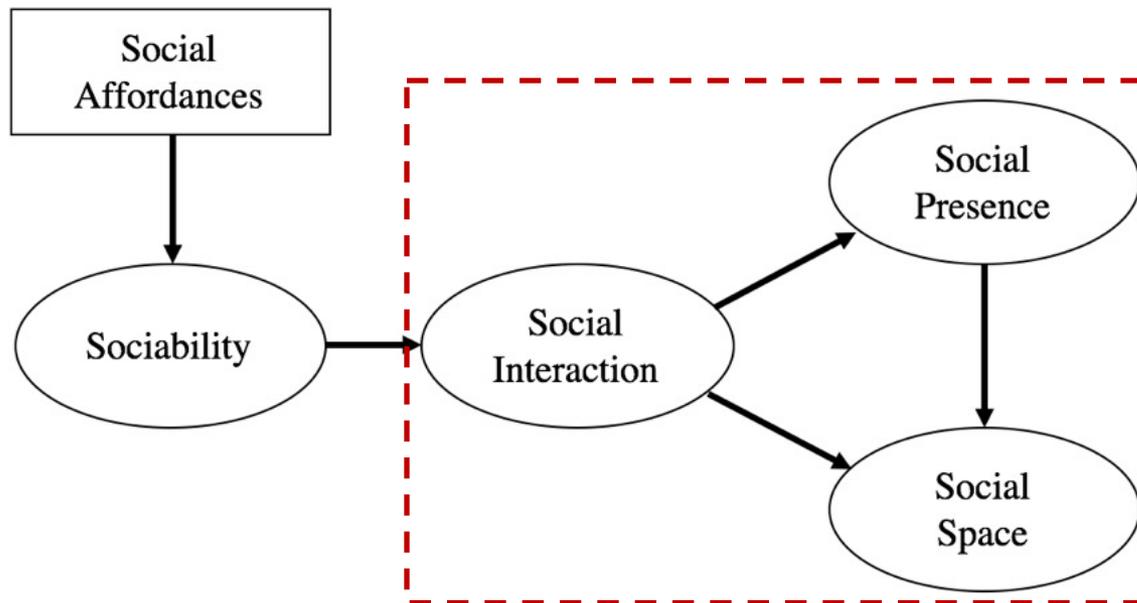
What is Social Presence?

Rourke, Anderson, Garrisson, & Archer (2000): *"the ability of learners to project themselves socially and affectively into a community of inquiry"*

Tu & McIsaac (2002): *"measure of the feeling of community that a learner experiences in an online learning environment"*

Lowenthal, P. R., & Snelson, C. (2017). In search of a better understanding of social presence: an investigation into how researchers define social presence. *Distance Education*, *38*(2), 141-159.

What is Social Presence?

Convoluted definitions and problematic measures

Continuum of Definitions (Lowenthal, 2010):

Perceiving the other
as *real* and *there* ⟵——————⟶ Perceiving there to be an
interpersonal, affective
connection

Lowenthal, P. R. (2010). The evolution and influence of social presence theory on online learning. In *Online education and adult learning: New frontiers for teaching practices* (pp. 124-139). IGI Global.
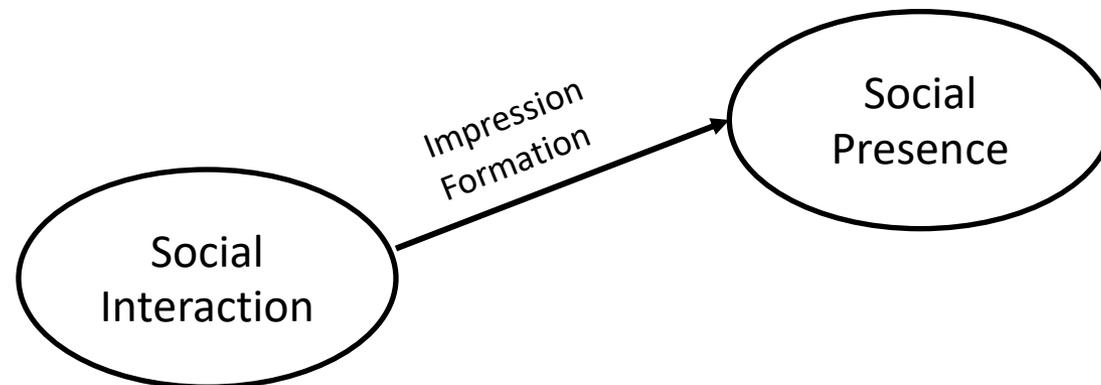
What is Social Presence?

Social presence is defined as the psychological phenomenon that the other is perceived as 'real' in the communication, the subjective feeling of being with other salient social actors in a technologically mediated space.

Weidlich, J., Kreijns, K., Rajagopal, K., & Bastiaens, T. (2018, June). What Social Presence is, what it isn't, and how to measure it: A work in progress. In *EdMedia+ Innovate Learning* (pp. 2142-2150) (AACE).

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Walther, J. B. (1993). Impression development in computer-mediated interaction. *Western Journal of Communication*, *57*(4), 381-398.
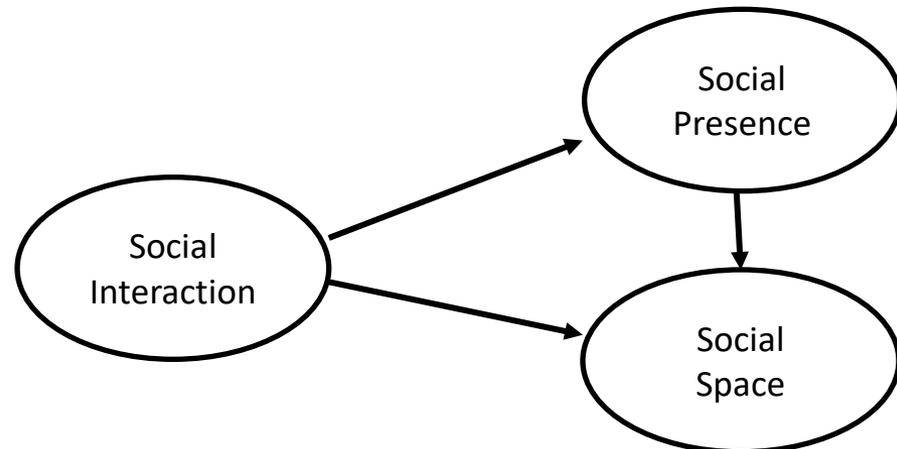
What is Social Space?

Social Space is the perception of a network of interpersonal/social relationships between students in the learning environment. It encapsulates what is often associated with concepts like sense of community, group cohesion, and beneficial learning climate

Kreijns, K., Kirschner, P. A., Jochems, W., & Van Buuren, H. (2004). Measuring perceived quality of social space in distributed learning groups. *Computers in human behavior*, *20*(5), 607-632.

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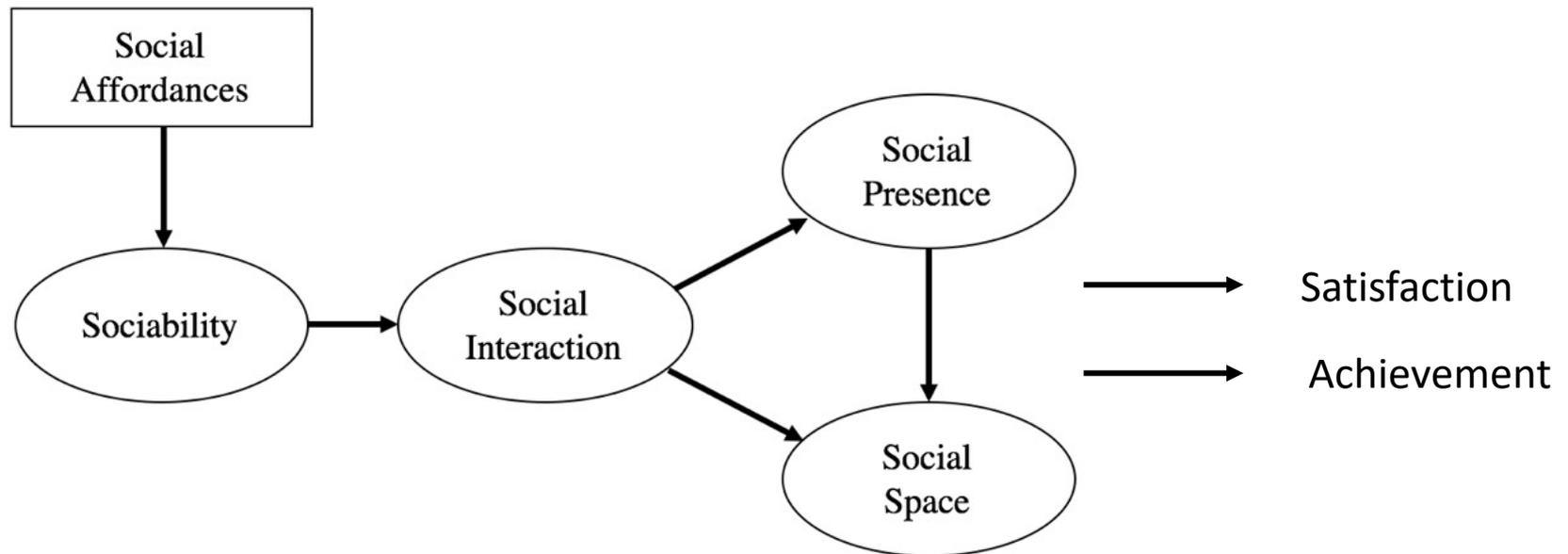
Joshua Weidlich

SIPS


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┌──────────────┐
│    Social    │
│  Affordances │
└──────┬───────┘
       │
       ▼
  (Sociability) ──→ (Social Interaction) ──→ (Social Presence) ──→ Satisfaction
                                         ──→ (Social Space)    ──→ Achievement
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Weidlich, J., & Bastiaens, T. J. (2017). Explaining social presence and the quality of online learning with the SIPS model. *Computers in Human Behavior*, *72*, 479-487.

Research Questions

RQ1 How effective are social affordances in creating sociable learning environments?

RQ2 How effective are sociable learning environments in facilitating social interaction, social presence, social space, as well as a satisfying learning experience?

RQ3 How do these socio-emotional variables affect actual learning achievement?

RQ4 How did students perceive the social affordances in terms of visibility and how frequently did they engage, i.e. were they actual affordances ?

Research Design

Quasi-Experiment with Pre-/Post-Test Design

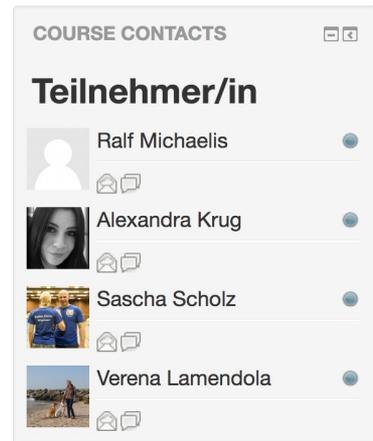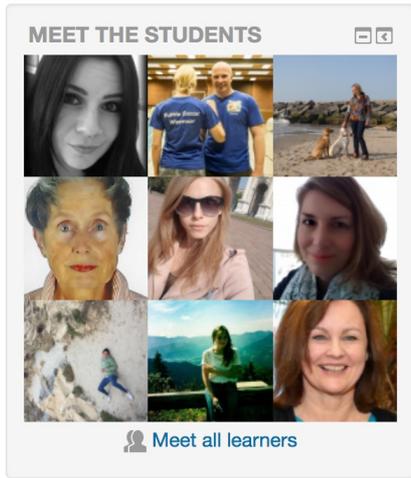| Control group	Experimental group
WS 16/17	WS 17/18
N = 86	**N = 57**

Focus course

- 4 Weeks
- 3 Content areas
- Open Chats
- Collaborative learning tasks
- Questionnaire upon entering & exit

SIPS Variables (Weidlich & Bastiaens, 2017)

- *Sociability* (Manipulation Check)
- Social *Interaction*
- Social *Presence*
- Social *Space*
- (Satisfaction)
- (Learning)

Three Social Affordances

MEET THE STUDENTS

Meet all learners

COURSE CONTACTS

Teilnehmer/in

Ralf Michaelis

Alexandra Krug

Sascha Scholz

Verena Lamendola

Characteristics of SNS

- Identity
- Network
- Social Interaction

https://moodle.org/plugins/

Themen-Dialog

Dialog-Funktion

View conversations   Drafts   Bulk open rules

Open   Closed

Displaying

josh weidlich   **Hallo?** - Funktioniert das?
Alexandra Krug   josh weidlich

Measurement

Variable	Description	Items	Measure	Cronbach's Alpha
Sociability	The perceived quality of the learning environment to facilitate social interaction.	10	Kreijns et al. (2007), adapted for non-CSCL context;	0.85
Social Interaction	The perceived amount and frequency of communication between a given student and his peers.	4	Wei et al. (2012)	0.93
Social Presence	The psychological sensation of the other being "there" and "present".	10	Weidlich, Rajagopal, & Kreijns (2018)	0.90
Social Space	The perceived network of interpersonal relationships between students.	13	Kreijns et al. (2004), adapted for non-CSCL context	0.78
Satisfaction	The extent to which the student is content regarding all aspects of the learning experience.	6	Weidlich & Bastiaens (2017)	0.90
Learning	Multiple Choice items assessing content knowledge	10	-	-

What did we find?

RQ1 How effective are social affordances in creating sociable learning environments?

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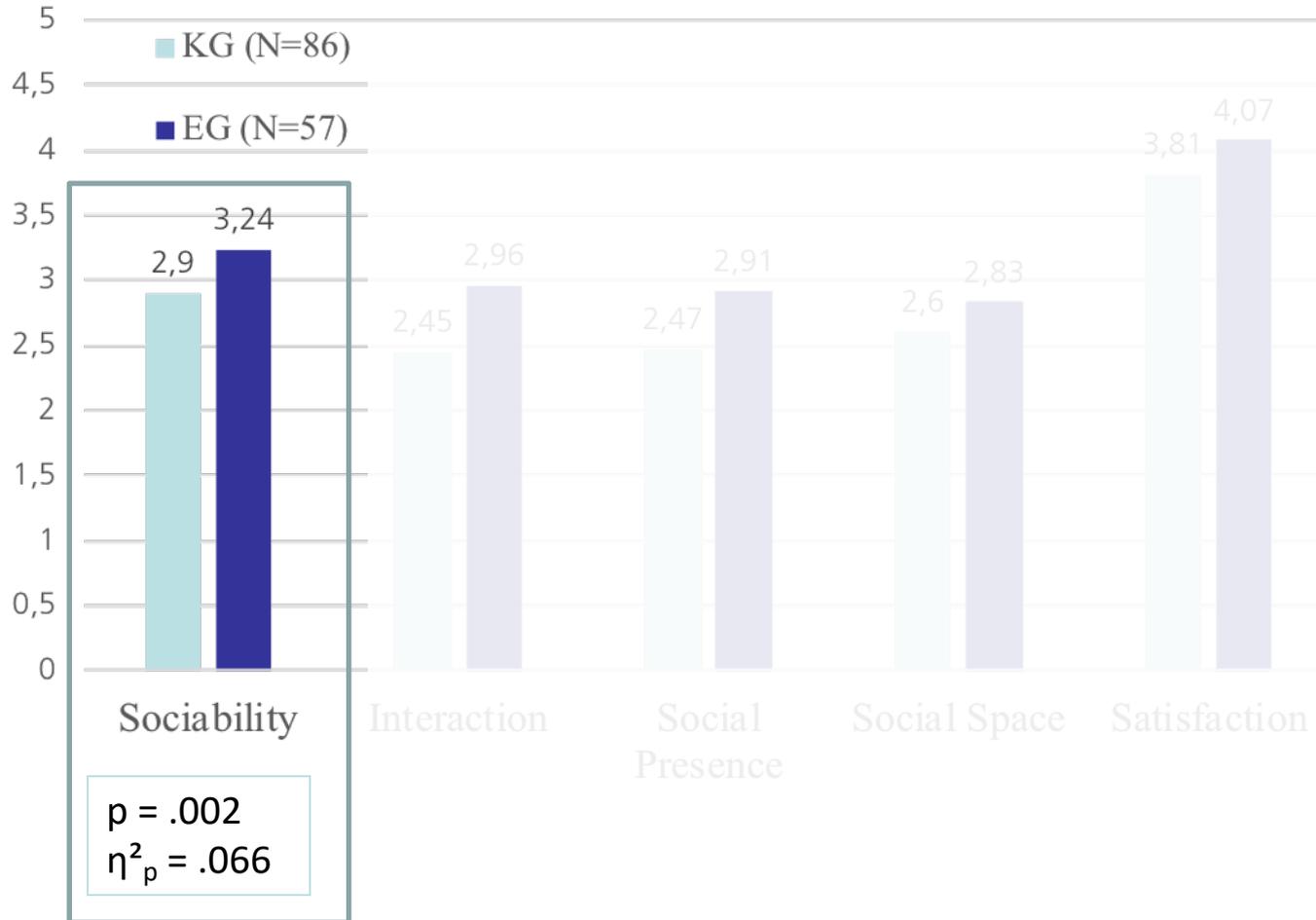
Statistical Test:
ANCOVA with
Pre-Test as Covariate

Interpretation
Partial Eta Squared:
small = .01
medium = .06
large = .14

p = .002
η^2_p = .066

RQ2 How effective are sociable learning environments in facilitating social interaction, social presence, social space, as well as a satisfying learning experience?

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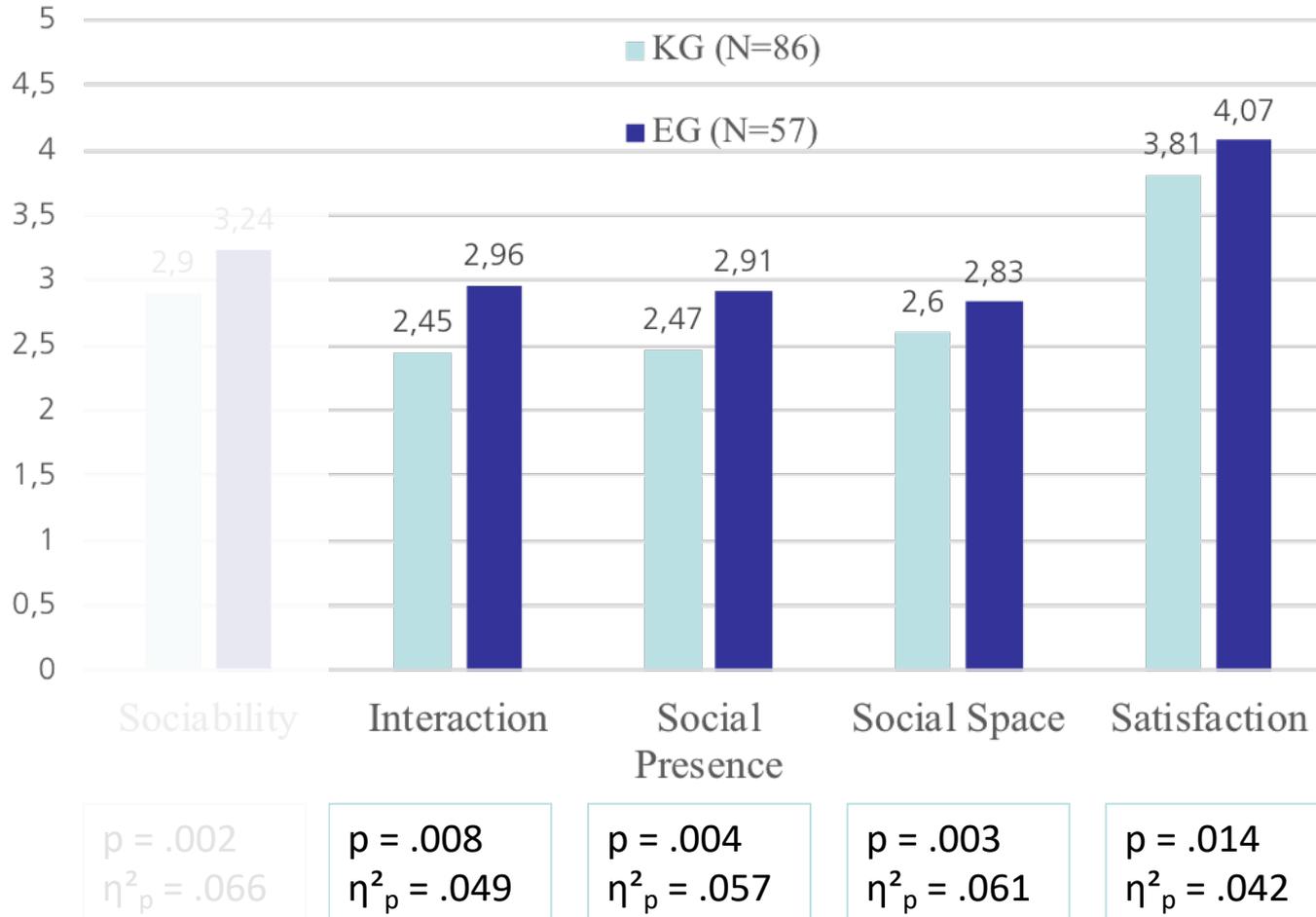**Statistical Test:**
ANCOVA with
Pre-Test as Covariate

**Interpretation
Partial Eta Squared:**
small = .01
medium = .06
large = .14

Chart data:

	KG (N=86)	EG (N=57)
Sociability	2,9	3,24
Interaction	2,45	2,96
Social Presence	2,47	2,91
Social Space	2,6	2,83
Satisfaction	3,81	4,07

Statistics below bars:

- Sociability: $p = .002$, $\eta^2_p = .066$
- Interaction: $p = .008$, $\eta^2_p = .049$
- Social Presence: $p = .004$, $\eta^2_p = .057$
- Social Space: $p = .003$, $\eta^2_p = .061$
- Satisfaction: $p = .014$, $\eta^2_p = .042$

RQ3 How do these socio-emotional variables affect actual learning achievement?
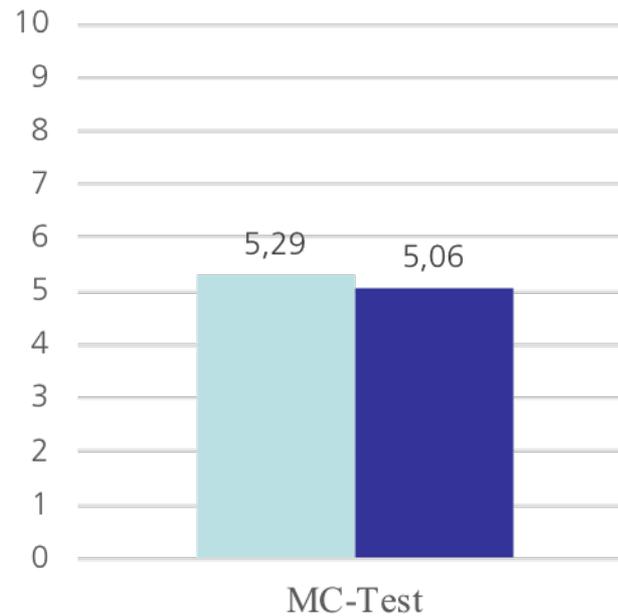
Welch's T-test
p = .31, d = .18

RQ4 How did students perceive the social mechanisms in terms of visibility and how frequently did they engage, i.e. do they have social affordances?

	Visibility: "I was aware of Moodle tool *XY*"		Engagement: "I engaged with Moodle tool XY"				
	Yes	No	very frequently	frequently	occasionally	rarely	never
„Meet the Students"	39 (67.2%)	19 (32.8%)	2 (3.6%)	5 (9.1%)	10 (18.2%)	14 (25.5%)	24 (43.6%)
„Course Contacts"	42 (72.4%)	16 (27.6%)	1 (1.8%)	5 (8.8%)	11 (19.3%)	15 (26.3%)	26 (45.6%)
„Theme-Dialog"	35 (60.3%)	23 (39.7%)	-	4 (6.9%)	13 (22.4%)	12 (20.7%)	29 (50%)

→ Is the veneer of sociability enough?

To conclude:

1. SIPS model as the framework

2. Sociability of the learning environment as a starting point

3. Ecological approach to improve sociability

4. Social Affordances as action-possibilities inviting social interaction

5. Robust pattern of increase in desirable socio-emotional variables, as well as satisfaction

6. Even though actual engagement with these social affordances was limited (→ *veneer of sociability*?)

7. No effect on actual learning achievement

Practical Notes

- Practitioners with an interest in fostering socio-emotional aspects may benefit from consulting the SIPS model for guidance

- In terms of social affordances, there many demonstrably "social" Moodle Plugins, that are ready to use.

- Social Networking features may be a source of inspiration when trying to come up with social affordances.

- These features can't replace proper instructional design and an attentive and helpful online instructor.

- On the contrary, these social affordances will only make sense to students, if they find them practical or helpful to use, to fulfill some social needs or educational purpose

Thank you for your time!

Questions?

Joshua Weidlich