MASTERARBEIT | MASTER'S THESIS

Titel | Title

Exploring Well-Being in Children: A Feasibility Study on the Use of Ecological Momentary Assessment

verfasst von | submitted by

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angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien | Vienna, 2024

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 066 840
Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:	Masterstudium Psychologie
Betreut von | Supervisor:	Assoz. Prof. Giorgia Silani Privatdoz. PhD

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Introduction

Children's well-being is central to their development as it lays the foundation for their future mental health. Mental health issues commonly manifest in adolescence (Solmi et al., 2022) with prevalence rates in this age group being alarmingly high. In Austria, about one fourth of adolescents is suffering from a mental disorder (Wagner et al., 2017) and suicidal tendencies among children and adolescents tripled between 2018 and 2022 (Österreichische Gesellschaft für Kinder- und Jugendpsychiatrie, 2023).

In light of these findings, it becomes evident that children's mental health needs should be addressed early in order to prevent the development of a psychiatric disorder later in life. However, there is a lack of suitable resources. Recently, an attempt to close this gap has been proposed by the COMET4KIDS project. A group of researchers at the university of Vienna are developing a preventive mental health intervention program targeted at fourth grade primary school students. The present thesis is part of this project.

The transition from primary to secondary school has been recognized as a demanding phase (Riglin et al., 2013; West et al., 2010). Children face a change in routines, relationships and academic expectations that is often accompanied with a certain degree of anxiety. Consequently, during this period, children are particularly vulnerable to emotional changes, resulting in a heightened risk for the manifestation of mental health issues (Evans et al., 2018; Rice et al., 2021). Considering the relevance of this period of life, the COMET4KIDS project is targeted at fourth grade primary school students to strengthen resilience and autonomy before facing the challenges of school transitioning.

Despite the increased awareness of the importance of children's mental health, there remain challenges in accurately assessing and understanding the factors that contribute to it. Given the complex nature of human emotions, momentary affective states can vary significantly over time and in different situations. To better understand how children's well-being interacts with

environmental influences, it is crucial to examine fluctuations over time. The present study attempts to provide further insight into the well-being of children, it's assessment and relation to behavioural aspects by making use of an experience sampling method. A two-stage consecutive research process is applied to develop a novel questionnaire and provide preliminary evidence of its feasibility in a small-scale pilot study.

Well-Being

Well-being and mental health are closely related, with this relationship inexplicitly defined. The World Health Organization understands mental health as a component of holistic well-being (World Health Organization, 2022), while other definitions view well-being as a component of mental health (Keyes, 2005). Likewise, the concept of well-being itself does not have a single definition. The Oxford English Dictionary describes well-being as "the state of being healthy, happy, or prosperous; physical, psychological, or moral welfare" (2023). Traditionally, two different perspectives were distinguished, the hedonic and eudaimonic perspective, that can be translated into subjective and psychological well-being. The hedonic paradigm describes well-being as the pursuit of pleasure and avoidance of pain whereas the eudaimonic paradigm views well-being as a person's strengths and true potential (Ryan & Deci, 2000).

Most researchers understand well-being as a multidimensional construct. One theoretical model was introduced by Seligman in 2011. The PERMA model of flourishing defines well-being to consist of five components: positive emotions (P), engagement (E), relationships (R), meaning (M), and accomplishment (A) (Seligman, 2011). Seligman's PERMA model has been empirically tested as a framework to measure well-being in a male adolescent sample. Results of the factor analyses confirmed the multidimensionality of the construct. Positive emotions, engagement, relationships and accomplishment have been found to be distinct domains of well-being (Kern et al., 2015).

Well-being and Lifestyle

Preliminary research indicates that a healthy lifestyle is crucial for children's well-being (Lekše et al., 2023). A healthy lifestyle encompasses a variety of behavioural factors, two of which receive closer attention in this study.

Social Connectedness

One aspect that is believed to have an impact on children's well-being is social connectedness. Existing evidence suggests that healthy relationships and the feeling of being connected are strongly linked to children's and adolescent's well-being (Graham et al., 2016; Jose et al., 2012; Lamblin et al., 2017), while, conversely, loneliness in young people is related to negative mental health effects such as depression and anxiety (Loades et al., 2020; Stickley et al., 2016).

The importance of social connectedness for children's mental health became particularly evident during the COVID 19 pandemic, when periods of lockdown and social distancing policies led many children into isolation. Considering the importance of friendships during adolescence, life satisfaction among youth rapidly decreased during this time and adverse mental health outcomes became prominent (Loades et al., Magson et al., 2021).

Since children spend a significant amount of their time in school, the social climate at school is central to student's mental health (Aldridge & McChesney, 2018; Long et al., 2021). Research indicates that from primary school to secondary school, there tends to be a decline in overall wellbeing (Tobia et al., 2019). However, maintaining close relationships with peers over this period of time has been shown to act as a protective factor (Lester & Cross, 2015), and increase happiness as well as positive mental health outcomes (Heinsch et al., 2020; Ng-Knight et al., 2019).

Digital Media Use

In recent years, there has also been an increased focus on digital media use in the context of children's well-being. Higher levels of screen time have shown to decrease perceived quality of life

(Stiglic & Viner, 2019) and psychological well-being (Twenge & Campbell, 2018) with this effect being higher for adolescents than for younger children (Twenge & Campbell, 2018). Excessive use of digital media is associated with poor sleep, depressive symptoms, suicidal tendencies, and ADHD-related as well as antisocial behaviours (Lissak, 2018). Furthermore, social media use can negatively influence adolescents' self-perception and relationships through social comparison and exposure to negative interactions like cyberbullying, which leads to a higher risk of self-harming behaviour (Abi-Jaoude et al., 2020).

A systematic review and metanalysis from 2019 analysed the data from 41 studies, including 41,871 participants, to assess the prevalence of problematic smartphone use and its association with mental health issues. The findings indicate that approximately 23.3% of children and young people experience problematic smartphone use, which is significantly linked to enhanced odds of depression, anxiety, stress, and poor sleep quality, highlighting the significance of social media use a public health concern (Sohn et al., 2019).

Beyond this theoretical evidence, adolescents themselves recognize social media as a threat to their subjective well-being. In a qualitative study from 2018 the authors identified three main themes teenagers were concerned about regarding the influence of social media on their well-being. They reported a perceived connection between social media and symptoms of anxiety and depression, heightened risk of bullying on social media platforms and the use of social media itself turning into an addiction (O'Reilly et al., 2018).

Taken together, these results paint a clear picture of the importance of lifestyle aspects for well-being in youth populations, with a greater quantity of studies focusing on adolescents rather than primary school students and the predominant methodology being traditional quantitative research.

Ecological Momentary Assessment

When measuring mental states and well-being, one scientific difficulty is that traditional questionnaires rely on memory. Participants often inaccurately remember how they felt, a phenomenon known as recall-bias. While there are some inconsistencies in the literature regarding the difference between recalling positive and negative affect, it has been repeatedly shown that both are prone to bias. In healthy populations, people tend to overestimate positive emotions in hindsight to preserve a positive self-image (Colombo et al., 2020; Ottenstein & Lischetzke, 2020). Conversely, subjects with depressive tendencies overestimate negative affective experiences (Colombo et al., 2020).

To minimize this effect, the present study used an experience sampling method to assess the children's affective states. Ecological Momentary Assessment (EMA) allows for a more accurate assessment of the participants affective states as it entails repeated measures in real time. A further advantage of this method is that it captures the subjects' experiences in their natural environment and thereby offering a higher ecological validity (Shiffman et al., 2008).

Although sparse, there exist a few studies using ecological momentary assessment to assess well-being in children and early adolescents. Dunton et al. (2014), for instance, conducted an EMA study on the relation of children's physical activity to their feeling states. Higher physical activity prior to the EMA prompt was associated with more positive affect, feeling more energetic and less negative effect. In general, active children showed more emotional stability.

A novel study of Walsh et al. (2023) examined how daily affective states of adolescents differed within social contexts. Participants reported higher arousal and valence in their everyday affect when in company than when alone. The same did not apply for remote contact. Interestingly, while valence was significantly higher in peripheral company, no significant difference was found for close company.

Similarly, Schmidt et al. (Schmidt et al., 2020) investigated social environment and the role of peers. They conducted a series of three EMA studies on the impact of relatedness satisfaction and frustration at school in children on their affective well-being. The findings consistently showed that on days when children felt more related to their peers, they also felt happier. Moreover, the results suggest that on days, when children felt more related to their peers, they also felt less unhappy.

Research Aims

Children's well-being as a field of research has received a great deal of attention over the last decades. However, most studies are limited to retrospective assessment methods that might fail to capture the dynamic nature of well-being within the context of children's everyday live. The present study attempted to fill this gap by developing and evaluating a unique ecological momentary assessment tool. Combining qualitative and quantitative approaches, this research seeks to provide a comprehensive understanding of children's well-being and inform evidence-based interventions and policies aimed at promoting well-being in this age group.

The present thesis investigated the use of EMA to measure well-being in children through a two-stage research process, which comprised the development of the questionnaire and a pilot study. The goal of the development phase was to create an EMA survey that is age-appropriate, easily understood and well-accepted. Accordingly, the first research aim was to evaluate the feasibility of assessing children's affective states in an analogue diary-type EMA. To this end, a qualitative analysis was carried out, addressing the following research question:

Which items based on the PANAS-C are feasible to assess well-being in fourth year primary school students in an ecological momentary assessment?

Furthermore, reliability of the questionnaire and the participants response behaviour was analysed. The second research aim of the present study was to investigate how certain lifestyle

habits are linked to children's well-being. In particular, the students' social interactions and digital media use were of interest. Based on existing literature, the following hypotheses were derived.

H1: There is a link between digital media use and well-being.

H1.1 Not using digital media is associated with more positive affect (PA) and less negative affect (NA).

Based on the results of the descriptive analysis, a further hypothesis was added later in the process:

H1.2 Consuming short form digital media content is associated with less PA and more NA compared to the consumption of long form content.

H2: There is a link between social connectedness and well-being.

H2.1: Having fun with friends is associated with more PA and less NA.
H2.2: Experiencing conflict is associated with less PA and more NA.

Methods: Development Phase

Participants

The sample size for the qualitative data workshop comprised 55 students from three fourth grade classes at an Austrian Primary School. A one-hour research workshop on the topic of feelings and emotions was conducted using focus groups to gain insights into the children's understanding and conceptualization of various emotional terms. The study is part of a larger project that was approved by the ethics committee at the University of Vienna (EK-Nr. 00825). Written informed consent was obtained from the children as well as their parents prior to the participation.

Procedure

The development of the questionnaire involved an iterative process of designing items based on literature, testing them in research workshops, and making necessary adaptations. To assess well-being, it was decided to base the items on the PANAS-C (Positive and negative affect schedule - child version; Laurent et al., 1999) as it is a valid and reliable tool to assess momentary affective states in children with short items that are suitable for an EMA. German translation of the items

was taken from the German Parent version of the questionnaire (PANAS-C-P; Großheinrich, 2020) as the translations were better than the German PANAS-C (Breyer & Bluemke, 2016). Furthermore, some German words were added that our research team felt were better than the translated words (e.g. “entspannt” (relaxed) in addition to “ruhig” (calm), resulting in a final pool of 30 items.

During the development phase of the COMET4KIDS project a series of workshops on different mental-health related topics were implemented over the course of whole school year. One workshop was dedicated to test the pool of items. During this one-hour workshop, focus groups of four to six students were formed, each led by a researcher who facilitated an open discussion about the meaning and concept behind the positive and negative feeling words. For every word on the list, children were asked the following questions: Do you know this word? What does it mean? Would you use it? Do you know a better word? Is it a nice feeling or an unpleasant feeling? When do you feel this way? Out of the similar words, which one would you be most likely to use?

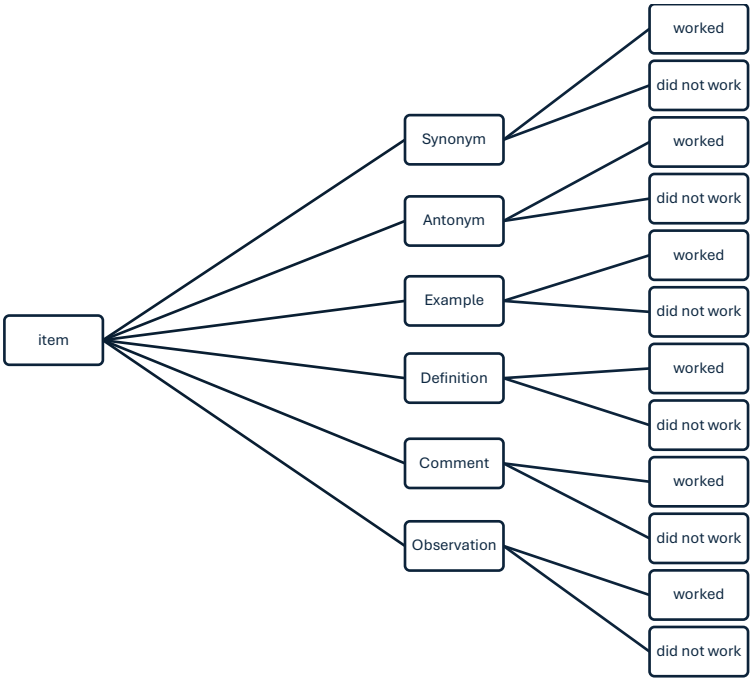
Analysis

Qualitative data from the workshop was collected in German on hand-written notes and later transcribed, translated and analysed with the qualitative data analysis software MAXQDA (VERBI software, 2024). An inductive, data-driven approach was employed for a stepwise thematic analysis using line-by-line coding.

First, every item was assigned an individual code, and all notes were labelled with the respective code. Then, a new document was created with an overview of the data for each code. Going through the data again, a new level of codes was generated, clustering the notes thematically. As a third and last step, all coded segments were marked as either “worked” or “did not work”, resulting in the final coding structure illustrated in Figure 1.

Figure 1

Coding Structure of Thematic Analysis.



Children were able to come up with Synonyms, Antonyms, Examples and Definitions for the words describing positive and negative affect. The Comment category contains additional remarks from the children. The Observation category consists of the researchers' impressions and notes.

Methods: Pilot Study

Participants

After developing the EMA-diary, a pilot study with a new set of students was conducted to ensure feasibility and acceptability of the questionnaire. The sample consisted of two fourth grade classes at an urban Austrian primary school. Children as well as their parents gave written informed consent before the beginning of the study.

Some students could not take part in the study due to missing consent or lack of language ability. One student had to be excluded from the analysis because they did not fill out the diary, resulting in a total sample size of 30 participants. Ethics approval was obtained from the ethics committee at the University of Vienna (EK-Nr. 00825).

Procedure

Before the start of the study, an introduction workshop was implemented to familiarize the students with the questions and make sure the items were clear. During the three-day study period no researchers were present. Teachers were instructed to let the students fill out the diary three times a day, (1) at eight o'clock before the first lesson, (2) at ten o'clock after the break and (3) at twelve o'clock before the end of the school day. The teacher handed out the sheets each time and collected them again to prevent the children from losing the diary or filling out future timepoints in advance.

It was decided to use an analogue EMA format as opposed to a mobile-based EMA. One reason for that was that children tend to get distracted by mobile devices and try to use them in unintended ways. Furthermore, this approach eliminated any concerns related to technological issues.

The final questionnaire consisted of eleven items assessing affective states on a five-point Likert scale. Those were prompted at every timepoint: *At the moment I feel… [item] - not at all (1) - very (5)*. Digital media use was assessed every day in the first assessment using a checkbox question: *Yesterday evening… I've spent my time with… [Tiktok; Intstagram; Youtube/Shorts; Netflix; TV; Games].* Social connectedness was assessed again with a five-point Likert scale. At the first timepoint, children were asked: *Did you have any arguments yesterday?* At the second timepoint, the questions were: *Did you have fun with other kids at school? Did you fight with other kids at school?* At the third time-point, a third question was added: *Did you feel like you had enough friends today?* (see whole questionnaire in Appendix).

After the pilot study, feedback was collected from the children as well as one of the teachers to get more insight into the implementation of the EMA during the children's daily routine.

Analysis

Statistical analysis, graphs and tables were computed using the software R (R Core Team, 2024a) and the application RStudio (R Core Team, 2024b). To test the hypotheses, the lme4 package was used (Bates et al., 2015). Due to circumstantial reasons in the school day, one teacher did not complete the questionnaire with their students on the last two timepoints. Since the imputation of that many missing values would have strongly distorted the measurement, the whole third day had to be excluded from the analysis.

Several linear mixed models' analyses were conducted to examine the effects of digital media use and social connectedness on positive and negative affect. It was expected that digital media use and in particular the consumption of short form content elicits more PA and less NA. With regard to social connectedness, having fun with friends was hypothesized to be associated with more PA and less NA, and contrariwise was hypothesized for the experience of conflict.

A hierarchical approach, adding and comparing model components in a fixed order, was used to ensure that the final model provides a good fit to the data without unnecessary complexity. Several models were calculated to test different random effect structures. Based on the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) the model with the least complexity was chosen (Whittaker & Furlow, 2009). Subsequently, control variables were added.

For each variable of interest, a linear mixed models' analysis was conducted. The first model included day and timepoint as fixed effects. In the second model, digital media use was added. The third model included fun/conflict as an additional predictor variable. The same procedure was applied for positive and negative affect. The models include random intercepts for subjects and days. To account for the data hierarchy, days are nested within subjects.

The significance level was set to $\alpha = 0.05$ for all tests.

Results: Development Phase

Qualitative results on the feasibility of the positive and negative affect items are presented below. Applying inductive thematic analysis six categories of data were identified: (1) Synonym, (2) Antonym, (3) Example, (4) Definition, (5) Comment, (6) Observation. Participants frequently reported their understanding of the given item by providing similar expressions with the same or an opposite meaning. Furthermore, they were able to come up with example situations or an explanation in their own words. Additional commentaries were placed in the fifth category. Lastly, the researchers' impressions were collected in a separate observation category.

All coded segments were labelled as either "worked" or "did not work", depending on whether the data indicates that the meaning of the word and the feeling it describes had been correctly understood. An overview of the results is presented in Table 1. Some examples of coded segments are listed for every item with the designated codes in brackets behind.

The right column provides additional information, quantifying the results over the whole sample. For every word, it has been added up in how many of the twelve focus groups the children were able to correctly describe it. The item counted as "worked" if half or more of the children in the group knew the meaning of the word. Not every single word was discussed in every focus groups due to limited time. Usually, the researchers skipped over words with a clearer result (e.g. happy or sad). Hence, missing values were treated as what they would most likely be in regard to the remaining data.

Table 1.

Qualitative Results.

PANAS item	Notes and Observations	Worked in ___ Focus Grouos
fröhlich (joyful)	glücklich (happy) [S, w]; when you see your best friend [E, w]; everyone knows it [O, w]	12/12
glücklich (happy)	fröhlich (joyful) [S, w]; when it's your birthday [E, w]; they know it [O, w]	12/12
freudig (cheerful)	similar to fröhlich (joyful) [S, w]; friendly [S, dw]; they don't use it [O, dw]	6/12
erfreut (delighted)	friendly [S, dw]; when you are happy [D, w]; no idea [O, dw]	5/12
aktiv (active)	when you have energy [D, w]; being "active" on WhatsApp [E]; I've heard it before [C, dw]	4/12
lebendig (lively)	when a doll comes to live [D, dw]; a cuddly toy is not lebendig (lively) [E, dw]; opposite of being dead [A, dw]	0/12
energiegeladen (energetic)	sleep gives you energy [D, dw]; full of power [D, w]; hard to explain [C, dw]	9/12
interessiert (interested)	I'm interested in my exam; [E, dw] interested in a girl/boy [E, dw]; if you want to know more about something [D, w]	6/12
stark (strong)	having muscles [D, dw]; when you do a lot of sports [D, dw]; lifting something heavy [E, dw]	4/12
stolz (proud)	when you have achieved something [D, w]; proud of good grades [E, w]; sometimes used [O, w]	10/12
ruhig (calm)	quiet [S, dw]; when no one talks [D, dw]; when you're not stressed [D, w]	5/12
entspannt (relaxed)	sitting down after a long walk [E, w]; relaxing music [E, w]; meditating [E, w]	10/12
aufgeregt (excited)	about the new school [E, w]; when someone scares you [D, dw]; can be positive and negative [C, w]	8/12
nervös (nervous)	about an exam [E, w]; heart is racing [D, w]; sometimes used [O, w]	9/12

hibbelig (jittery)	zickig (bitchy) [S, dw]; when you fly [D, dw]; they don't know what it means [O, dw]	1/12
traurig (sad)	when someone died [E, w]; about school transition [E, w]; they know and use it (O, w)	12/12
betrübt (blue)	betrügen (to cheat on someone) [S, dw]; betrunken (being drunk) [S, dw]; no one know what it means [O, dw]	0/12
bedrückt (gloomy)	when something bad happens [D, w]; reanimation (because of „drücken") [S, dw]; they don't really understand [O, dw]	2/12
unglücklich (miserable)	opposite of glücklich (happy) [A, w]; when you are very sad [D, w]; they would use it [O, w]	12/12
ängstlich (afraid)	when it's dark outside [E, w]; scary movie [E, w]; they would use it [O, w]	10/12
erschrocken (scared)	surprised [S, dw]; when someone hides behind the door [E, w]; rather not used [O, dw]	6/12
besorgt (worried)	mom is worried about her child [E, w]; cat ran away [E, w]; I have heard it but I don't use it [C, dw]	7/12
sauer (irate)	wütend (angry) [S, w]; opposite of süß (sweet) [A, dw]; when your siblings get something and you don't [E, w]	11/12
wütend (angry)	same as sauer (irate) [S, w]; when someone destroys something [E, w]; they rather use it more than sauer (irate)	12/12
böse (mad)	same as the two above [S, w]; when someone annoys you [D, w]; they know it [O, w]	12/12
aufgebracht (upset)	they don't know it [O, dw; no idea [O, dw]; difficult [O, dw]	0/12
einsam (lonely)	when you are alone you are sad [D, w]; "lonely" [S, w]; when your best friend spends time with others [E, w]	12/12
beschämt (ashamed)	traurig (sad) [S, dw]; you blush and hide [D, w]; they don't really know it [O, dw]	5/12
angeekelt (disgusted)	by food or vomit [E, w]; when you don't like something [D, dw]; difficult [O, dw]	4/12
schuldig (guilty)	innocent [A, w]; whose fault is it? [D, dw]; at court [E, dw]	2/12

Abbreviations: S = Synonym, A = Antonym, E = Example, D =. Definition, C = Comment, O =. Observation, w = worked, dw =. didn't work

As can be seen from Table 1, the results for some items were rather straightforward. Eleven items worked in nine or more of the twelve focus groups while five items only worked in two or less. “Traurig” (sad) and “unglücklich” (miserable) for instance were understood throughout the whole sample with participants providing numerous examples like ‘being sad about the upcoming school transition’. “Betrübt” (blue) on the other hand, while having a synonymous meaning, has not worked in the present sample at all. Children reported either having no idea about the meaning of the word or came up with incorrect definitions. One association for instance was “betrügen” (to cheat on someone) which phonetically sounds similar but has an entirely different meaning.

Other items were not as clear. “Ruhig” (calm) for example worked in five out of the twelve focus groups. While some children were able to correctly define it as not feeling stressed, other children understood it solely as being quiet. In German, being “ruhig” has both meanings of being calm and quiet. Therefore, the participants’s understanding of the word was not necessarily wrong, however, in the context of assessing affective states in this age group it would not be a good choice. By contrast, “entspannt” (relaxed) worked better, with examples like ‘sitting down after a long walk’, ‘relaxing music’ and ‘meditating’.

Similarily, the word “stark” (strong) has been mostly associated with physical power and muscles, “lebendig” (lively) was understood as not being dead and “schuldig”(guilty) associated with court. There was some discussion whether “aufgeregt” (excited) describes a positive or negative word. “Nervös”(nervous) was more clear, while “hibbelig”(jittery) has only been heard of in one focus group. “Energiegeladen” (energetic), “besorgt” (worried) and „erschrocken“(scared) were understood by most children but they stated they would rather not use the word themselves.

Out of the happy-words, “fröhlich” (joyful) and “glücklich” (happy) worked better than “freudig” (cheerful) and “erfreut” (delighted). “Unglücklich” (miserable) and “traurig” (sad)

worked better than “betrübt” (blue) and “bedrückt” (gloomy). “Sauer” (irate), “wütend”(angry) and “böse”(mad) worked all really well, while hardly anyone knew the word “aufgebracht” (upset).

Based on the results of the qualitative workshop, four positive and five negative affect words were chosen to include in the EMA questionnaire. One word was slightly adapted, and two new words were added, resulting in the final selection of items: fröhlich (joyful), entspannt (relaxed), voller Energie (full of energy), stolz (proud), gut gelaunt (in a good mood), zufrieden (satisfied), traurig (sad), einsam (lonely), wütend (angry), ängstlich (afraid), unglücklich (miserable).

Results: Pilot Study

Descriptive Statistics

The final sample consisted of 30 participants. 12 children (40%) belonged to one class and 18 children (60%) to the other. Figures 2 and 3 depict the summary statistics of the positive and negative affect ratings. As can be seen from the graph, the overall ratings for positive affect were significantly higher than for negative affect, with the mean values ranging from 3.12 to 3.69 in PA and from 1.25 to 1.56 in NA. In negative affect, more outliers were observed.

Figure 2.

Positive Affect Ratings in the Sample.

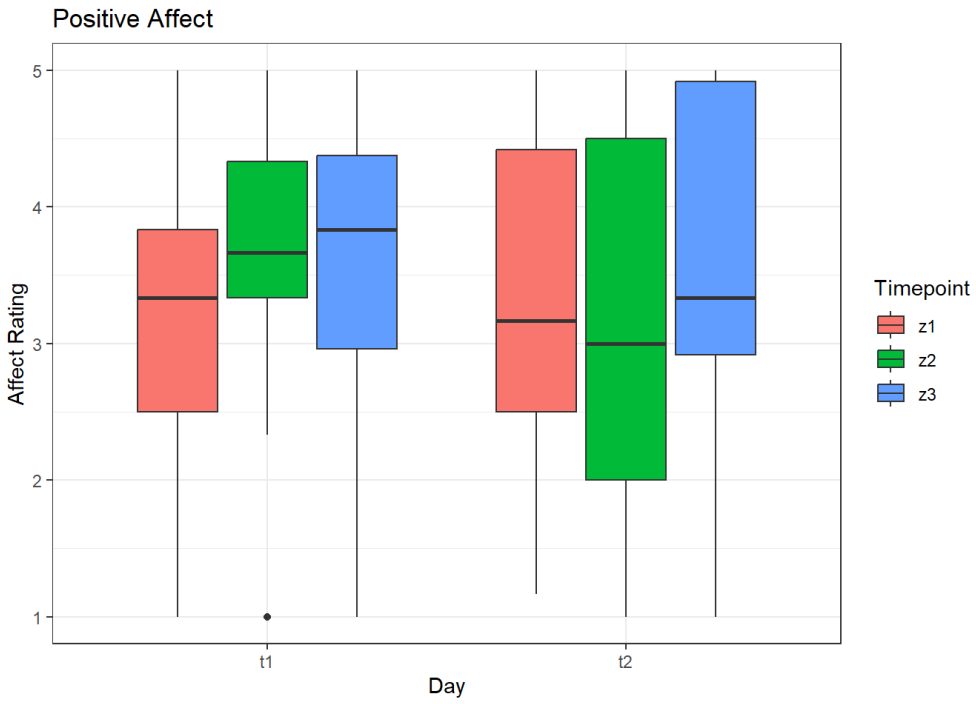
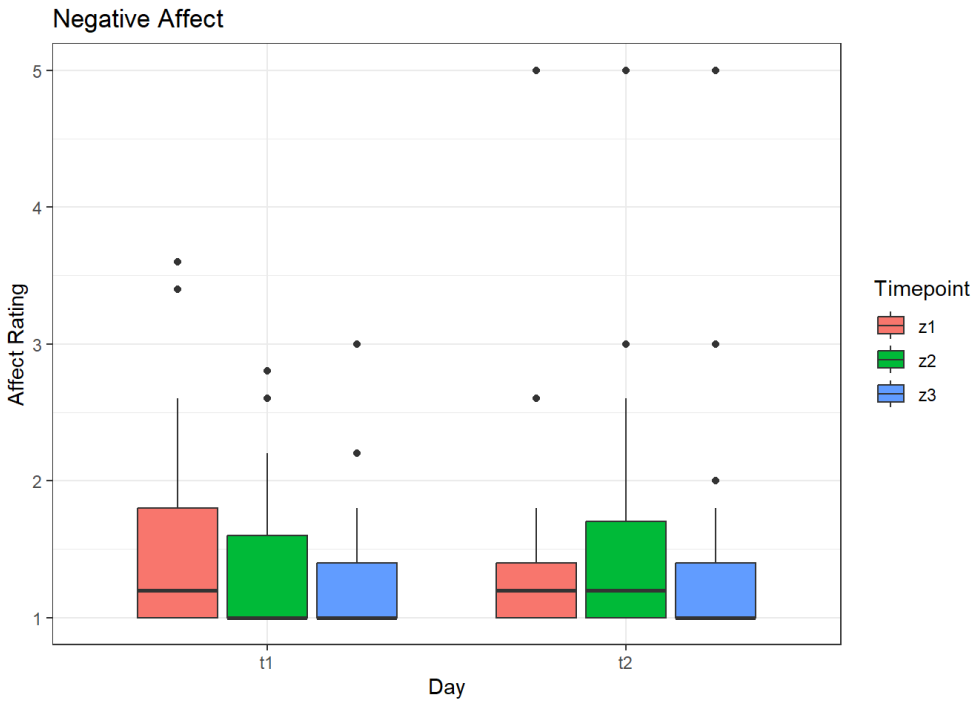


Figure 3.

Negative Affect Ratings in the Sample.



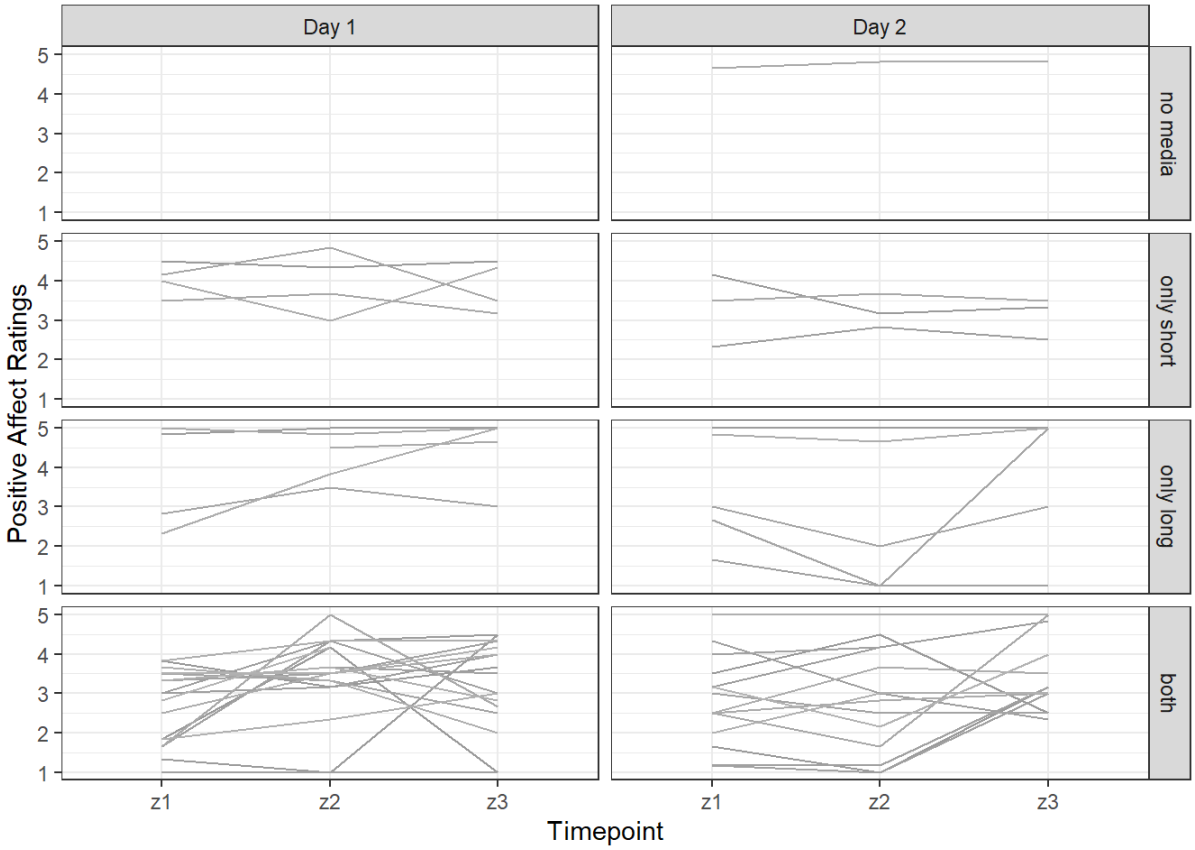
On day one, positive affect increased with every timepoint. On day two, the overall PA was slightly lower, with a decrease from timepoint one to timepoint two and an increase from timepoint two to timepoint three. In contrast, NA was similar on both days with a decrease from timepoint one to timepoint two on day one, and from timepoint two to timepoint three on day two.

To check the construct validity of the items, a regression analysis was performed. There was a significant negative relationship between PA and NA ($b=-0.13$, $p=0.004$), indicating that the higher PA, the lower NA.

The subject's affect ratings according to their digital media use are depicted in Figures 4 and 5. The sample was divided into four groups, (1) children who did not engage in any type of media, (2) children who only consumed short form digital media content, (3) children who only consumed long form content and (4) children who used both. The majority of the sample, 21 participants on day one and 20 participants on day two, made up the fourth group. As illustrated by the graphs, different conditions had varying impacts on positive affect over time. Overall, NA ratings tended to be more consistent compared to PA ratings that were subject to greater fluctuations.

Figure 4.

Positive Affect Ratings according to Digital Media Use.



On day one, there are no data points for positive affect in the 'no media' group, indicating that every participant engaged in some form of digital media. On day two, one student falls into this category. Their positive affect on that day was high and remained rather constant.

The PA ratings in the 'only short' and 'only long' digital media group fluctuated over time. While some subjects stayed consistent in their positive affect, others showed more drastic changes.

The last group that used both long and short form digital media content showed the most variation in PA ratings, indicating that they experienced more changes in positive affect across days and timepoints compared to the other groups.

Figure 5.

Negative Affect Ratings according to Digital Media Use.

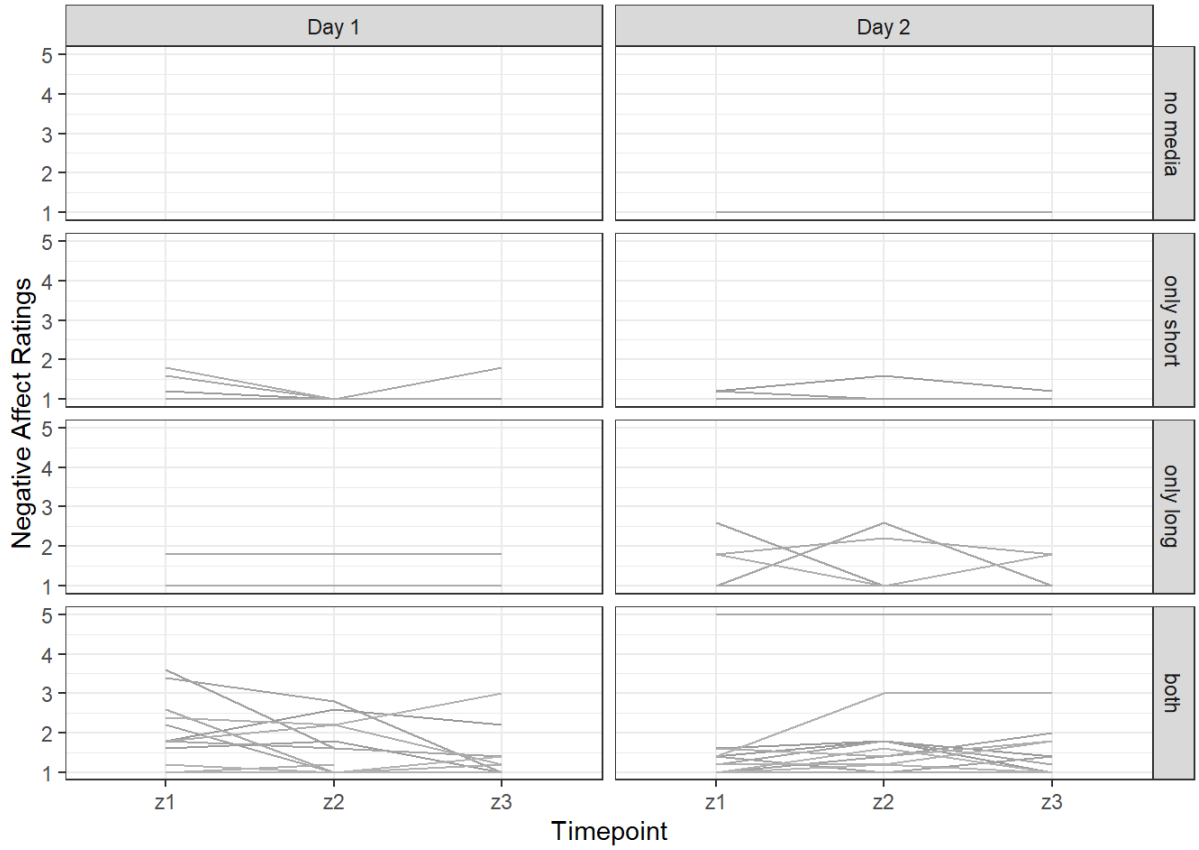


Figure 5 depicts the negative affect ratings according to the participants digital media use. Again, on day one, there is not data for the 'no media' group. On day two, the subject's negative affect was very low and stayed the same over measurements.

The group who only consumed short form digital media content showed little variation in negative affect with overall low ratings. In the 'only long' group, the ratings were slightly higher with some fluctuations on day two.

The group who consumed both forms of digital media displayed the highest NA ratings on day one, with a decrease over time. On day two, negative affect remained fairly constant.

Lastly, the distribution of the variables 'fun' and 'conflict' are depicted in Figures 6 and 7. While the subjects generally reported having a lot of fun, overall experience of conflict was very low,

except for a few outliers. The graphs suggest that conflict was similarly distributed across both days. In terms of having fun, day one was more consistent. On day two, the variable fun showed more variability.

Figure 6.

Distribution of Fun in the Sample.

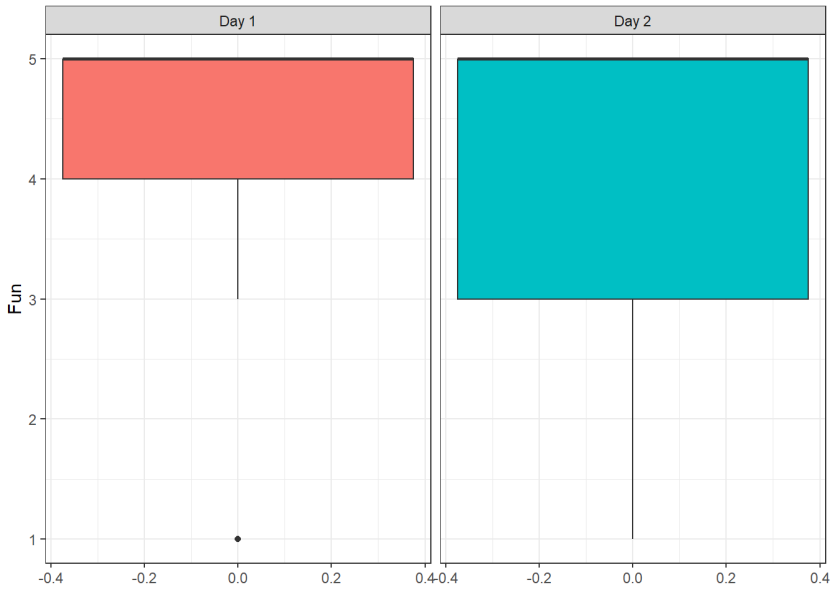
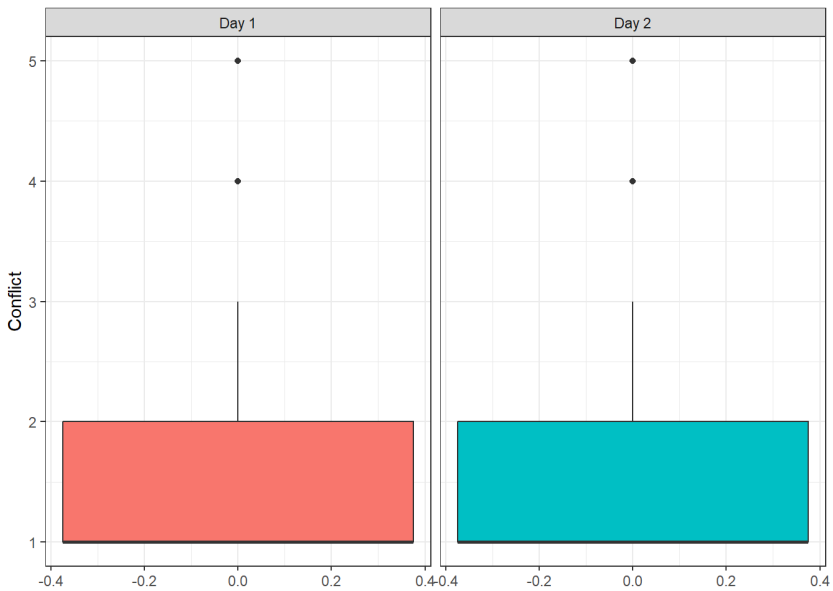


Figure 7.

Distribution of Conflict in the Sample.



Linear Mixed Models

Positive Affect

Table 2 shows the results of the LMM for positive affect. The first model including the predictor variables ‘day’ and ‘timepoint’ (M1) revealed a main effect for timepoint two (b=0.45, p=0.042), indicating that positive affect significantly differed at timepoint two compared to timepoint one. The analysis did not demonstrate any statistically significant interactions between day and timepoint for PA. However, the interaction effect between day two and timepoint two (b=−0.61, p=0.056) was almost significant, suggesting a potential negative interaction effect.

In the second model (M2), including ‘digital media use’ as a fixed effect, there was a significant increase in positive affect at timepoint two compared to timepoint one (b=0.46, p=0.0498). Different social media usage patterns did not significantly predict positive affect. However, the student who did not use digital media exhibited a 1.03-point higher positive affect compared to those who consumed both long and short form digital media content, although this difference was not statistically significant.

The third model (M3), which included the variables 'fun' and 'conflict', showed that having fun was significantly associated with higher positive affect. Specifically, for each one-point increase in fun, positive affect increased by 0.26 points (b=0.26, p=0.003). Although not significant, this model also revealed effects of digital media use. Within the sample, the ‘no media’ group showed a 1.15-point higher PA, and the ‘only long’ digital media group showed a 0.70-point higher PA compared to the group that used both forms.

Table 2.

LMM Positive Affect.

	M1		**M2**		**M3**	
Predictors	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*
(Intercept)	3.26 (0.20)	**<0.001**	3.16 (0.21)	**<0.001**	2.59 (0.45)	**<0.001**
day 2	0.06 (0.24)	0.807	0.01 (0.25)	0.954	-0.41 (0.28)	0.140
timepoint 2	0.45 (0.22)	**0.042**	0.44 (0.22)	**0.045**		
timepoint 3	0.28 (0.22)	0.194	0.28 (0.22)	0.196	-0.13 (0.26)	0.613
day 2 × timepoint 2	-0.61 (0.31)	0.056	-0.61 (0.32)	0.057		
day 2 × timepoint 3	0.10 (0.31)	0.738	0.11 (0.31)	0.734	0.59 (0.37)	0.114
no media			1.03 (0.99)	0.308	1.15 (0.95)	0.237
only short			0.22 (0.35)	0.522	0.23 (0.37)	0.533
only long			0.37 (0.35)	0.296	0.70 (0.36)	0.061
conflict					-0.14 (0.09)	0.129
fun					0.26 (0.08)	**0.003**
Random Effects						
σ^2	0.67		0.67		0.84	
τ_{00}	0.50 $_{id}$		0.42 $_{id}$		0.23 $_{id}$	
τ_{11}	0.25 $_{id.tagt2}$		0.38 $_{id.tagt2}$		0.08 $_{id.tagt2}$	
ρ_{01}	0.42 $_{id}$		0.29 $_{id}$		1.00 $_{id}$	
ICC	0.54		0.52		0.33	
N	30 $_{id}$		30 $_{id}$		28 $_{id}$	
Observations	165		165		104	

Negative Affect

The first model (M1), analysing the effect of day and timepoint on negative affect, revealed a significant main effect of both timepoints. There was a decrease in NA from timepoint one to timepoint two (b = - 0.24, p = 0.030) and a further decrease at timepoint three compared to timepoint one (b = 0.32, p = 0.005). The interaction effect of day two and timepoint two was also significant (b = 0.35, p = 0.027), as well as the interaction between day two and timepoint three (b = 0.32, p = 0.041), indicating that the timepoints vary significantly across the days.

The second model including 'digital media use' (M2) did not reveal any further significant effects. Different media usage patterns did not predict negative affect in this context.

Including 'fun' and 'conflict' as additional variables in the third model (M3), the main effects of day and timepoint as well as the interaction effect were no longer significant. Neither fun nor conflict resulted in a significant effect, suggesting that these variables do not add any explanatory power in this study.

Table 3.

LMM Negative Affect.

	M1		**M2**		**M3**	
Predictors	*Estimates*	*p*	*Estimates*	*p*	*Estimates*	*p*
(Intercept)	1.55 (0.14)	**<0.001**	1.62 (0.15)	**<0.001**	1.19 (0.24)	**<0.001**
day 2	-0.16 (0.19)	0.406	-0.15 (0.19)	0.454	0.26 (0.20)	0.193
timepoint 2	-0.24 (0.11)	**0.030**	-0.24 (0.11)	**0.030**		
timepoint 3	-0.32 (0.11)	**0.005**	-0.32 (0.11)	**0.005**	-0.02 (0.10)	0.864
day 2 × timepoint 2	0.35 (0.16)	**0.027**	0.35 (0.16)	**0.027**		
day 2 × timepoint 3	0.32 (0.16)	**0.041**	0.32 (0.16)	**0.041**	-0.10 (0.14)	0.464
no media			-0.51 (0.66)	0.440	-0.57 (0.69)	0.417
only short			-0.29 (0.26)	0.271	-0.29 (0.28)	0.307
only long			-0.16 (0.22)	0.473	-0.14 (0.25)	0.580
conflict					-0.01 (0.05)	0.790
fun					0.04 (0.04)	0.378
Random Effects						
σ^2	0.17		0.17		0.12	
τ_{00}	0.35 $_{id:tag}$		0.36 $_{id:tag}$		0.40 $_{id:tag}$	
ICC	0.68		0.68		0.77	
N	29 $_{id}$		29 $_{id}$		28 $_{id}$	
	2 $_{tag}$		2 $_{tag}$		2 $_{tag}$	
Observations	167		167		107	

Figures 6 and 7 illustrate, how the positive and negative affect ratings varied across days and timepoints.

Figure 6.

Illustration of LMM Results PA.

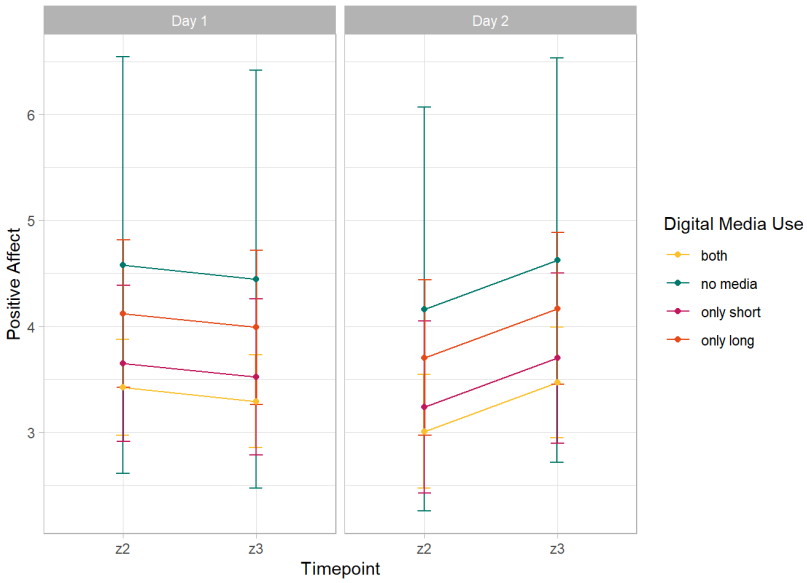
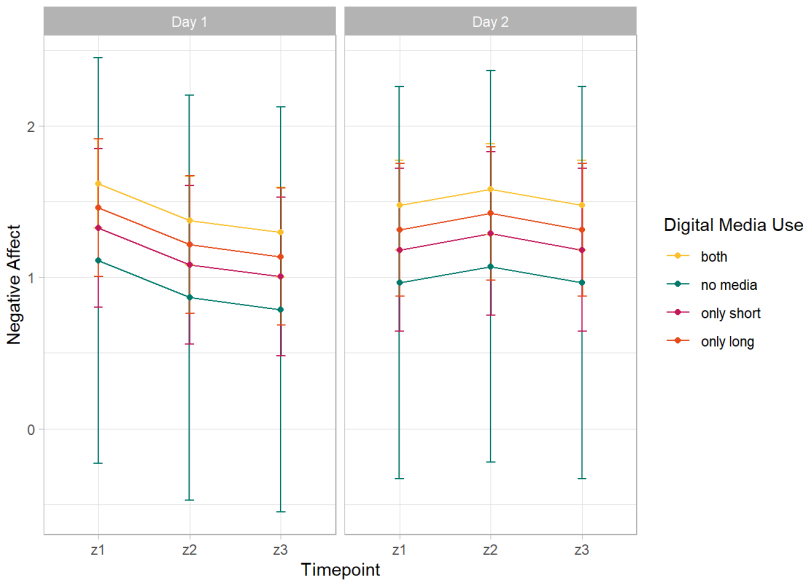


Figure 7.

Illustration of LMM Results NA.



Discussion

The present study introduced and analysed a novel EMA measure. The questionnaire was developed according to the results of a qualitative analysis in the first stage of the research process and then pilot tested in two fourth grade classes. The findings provide some relevant insight into the feasibility of the questionnaire and lay the groundwork for future larger-scale EMA studies on well-being in 9–11-year-olds.

Feasibility of the EMA measure

In summary, the results of the present study indicate that the EMA diary is a feasible measurement to assess children's well-being. Both teachers and students reported that, overall, the implementation of the EMA study was successful. Out of 30 students who took part in the study, only one did not fill out the diary. Due to unforeseen circumstances in the school day, one class could not complete the last two timepoints. This, however, cannot be taken as a sign that the children were not willing to participate. Excluding the last day from the analysis, over 92% of items have been completed across the whole sample, indicating overall feasibility and acceptability of the questionnaire.

During the development phase of the questionnaire, qualitative research was conducted, exploring which adjectives work best to assess affective states in primary school students. Inductive thematic analysis revealed a selection of items that performed well, building the base of the EMA questionnaire and supporting its feasibility in assessing well-being. The final questionnaire included six items for PA [fröhlich (joyful), entspannt (relaxed), voller Energie (full of energy), stolz (proud), gut gelaunt (in a good mood), zufrieden (satisfied)], and five items for NA [traurig (sad), einsam (lonely), wütend (angry), ängstlich (afraid), unglücklich (miserable)].

The second research stage comprised of a three-day EMA study. In this study, children generally reported lower negative and higher positive affect. Excluding one student from the analysis who

only ticked 5 for every item, there was a significant negative relationship between PA and NA, supporting the construct validity of the items.

However, although the intervals between the measurements were very short, the participants exhibited great fluctuations in affect. While it is possible that this is due to children's emotional nature or more extreme response behaviour, it could also be the case that some got bored by the repetitiveness of the questionnaire or simply did not care to answer the questions conscientiously.

As the brain is still developing in early adolescents, their ability to regulate emotions have not reached full capacity yet (McRae et al., 2012). It is possible that the rapid changes in affect that were observed are due to limited emotional control. There is also some evidence that younger children are generally less stable in their survey response behaviour, although this effect was partially explained by the design of the items (Borgers et al., 2002).

Furthermore, although overall response rates were high, the reasons for missing values remain unclear. It could be the case that some questions were simply overlooked. Another possible explanation is that children did not know how to answer a specific question.

Another interesting aspect of the participants response behaviour is that their affect significantly differed between the days/timepoints. This could be an indication that the changes in affect are due to an external variable that has not been assessed. Future studies should further investigate the complex affective experience of children in this age group. The pilot study provides preliminary evidence of the practicality of the diary EMA survey for this purpose.

Well-Being and Digital Media Use

In H1.1, it was hypothesized that not using digital media is associated with more PA and less NA. Remarkably, on day one, not a single participant did not engage in any type of media at all. On day two, one student stated that they had not used any form of digital media. Furthermore, on both days about two third of the sample stated that they had used both short and long form digital

media content the day before. Although not entirely surprising in view of previous findings (Humer et al., 2022; Quehenberger et al., 2020), these numbers are alarming.

With regard to the repeatedly proven negative consequences of digital media use on adolescents' mental health discussed in the introduction, having such high digital media engagement in children even before entering secondary school should be considered a primary risk factor for developing mental illness. Even though the present study could only provide a snapshot into the children's everyday life, the fact that digital media use was high on two consecutive days and both days were followed by a school day rather than the weekend, suggests that the majority of children from similar backgrounds use digital media on a daily basis.

Because the 'no media' group only consisted of a single student, neither the positive nor negative affect analysis resulted in a significant effect. However, in M2, the student who did not use digital media exhibited a 1.03-point higher PA, and in M3, a 1.15-point higher PA, compared to the group who consumed both long and short form digital media content. Although no clear conclusions can be drawn from this, it could be an indication that not consuming digital media has a positive effect on PA. The differences in negative affect were less pronounced, suggesting that not consuming digital media might reduce PA without inducing NA. However, it is necessary to reproduce these findings with a larger sample to rule out the possibility that this effect was due to chance or another unknown variable.

Due to the unexpected distribution of digital media use in the sample, a further hypothesis was added later in the process. Based on current findings on the rise of short video addiction and its relationship to poorer mental health (Fatima Zahra et al., 2022; Jiang & Yoo, 2024; Qu et al., 2024; Ye et al., 2022) H1.2 hypothesized that consuming short form digital media content like Tiktok, Instagram or Youtube Shorts is associated with less PA and more NA compared to only consuming traditional long form media like Netflix or TV. Therefore, the sample was divided into four groups according to their digital media use (no media, only short, only long, both). Again, there were no

significant effects. However, in M3, the ‘only long’ digital media group showed a 0.70-point higher positive affect compared to the group that used both forms. The same could not be observed for negative affect.

These results suggest that, within the sample, there was a tendency for students who only watched TV or Netflix to exhibit more positive affect compared to students who consumed both short and long form content. This could be an indication that the hypothesis is correct. Another possible explanation is that the children who consumed both forms of digital media content had longer screen times altogether which could have caused the reduction in PA regardless of the type of media they engaged in (Chau et al., 2022; Santos et al., 2023).

Well-Being and Social Connectedness

The second hypotheses referred to an aspect of social connectedness. It was theorized that having fun with friends at school was associated with higher PA and lower NA, while the experience of conflict was assumed to have the opposite effect. The linear mixed model’s analysis (M3) revealed a significant association of having fun and positive affect. Conflict did not appear to significantly change positive affect. For negative affect, neither of the variables resulted in a significant effect.

The significant association of fun with PA was in line with hypothesis H2.1. Similarly, a previous study that investigated close constructs, found that feeling related to peers (relatedness satisfaction) increases PA but has no effect on NA (Schmidt et al., 2020). The finding that having fun with friends at school has a positive impact on PA but does not significantly affect NA could be seen as a confirmation of these prior results.

The study of Schmidt at al. also found that not feeling related to peers (relatedness frustration) significantly lowered NA but did not have any effect on PA. Arguing that getting into conflicts with friends would elicit relatedness frustration, again, these findings could be compared to the present study. While this study also found no significant effect of conflict on PA, the present study could

not replicate the increase in NA observed by Schmidt et al (2020) and, thus, H2.2 could not be confirmed.

However, the distribution of the variables ‘fun’ and ‘conflict’ provides a reasonable explanation for this result. Only very few participants reported not having fun with their friends at school with the median rating being 5 on both days, implying consistently high levels of fun. Similarly, the median experience of conflict was 1 on both days, suggesting that the majority of children did not have any disputes during the study period. Therefore, it is not surprising that there are no significant changes in positive or negative affect related to conflict.

Limitations

As aforementioned, the present study can be regarded as a preliminary pilot test of the newly developed EMA measure. As such, the results are limited to a small sample as well as a short period of testing, substantially reducing the power of the study.

Furthermore, the intervals between measurements were very short. One advantage of using EMA to measure well-being is that it allows for measuring fluctuations in the subjects’ experiences over a period of time. However, in the present study, the timeframe was limited by school hours. Standard elementary schools in Austria run from eight to twelve am. Based on that, three measurement timepoints were set at eight, ten and twelve o’clock. Due to circumstantial reasons, the teachers were not always able to complete the questionnaire with their class exactly on time, leaving as little as one hour between some of the timepoints.

Another limitation of the study concerns the generalisability of the results. Both the qualitative and quantitative research relied on a convenience sample consisting of three classes from the same school for the qualitative workshop and two classes from another school for the pilot study. Therefore, it is important to be aware that the participants of the present study are not representative for the general population of Austrian fourth graders.

Lastly, it also noteworthy that during the course of the pilot study no researcher was present. As mentioned before, one teacher skipped the last two measurement points, resulting in an unfortunate lack of data for one entire day of the study. This event was out of the researchers control and severely limited the explanatory value study.

Conclusion

In summary, the present study supports the feasibility of the newly developed EMA diary and provides relevant insight into the well-being of fourth grade primary school children. While no significant effects of digital media use on positive or negative affect could be observed, there were some tendencies within the sample that might be indication that children who only consume long form digital media content or no digital media have higher positive affect compared to children who engage in short and long form digital media content. Having fun with other children was found to be a significant predictor of positive but not negative affect. Conflict was not significantly associated with positive nor negative affect, likely due to general low levels of conflict throughout the study. The inconclusive findings highlight the importance of future larger-scale EMA studies on children's well-being and influential lifestyle factors.

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Appendix

Tables

Figures

Abstract (English)

Children's well-being as a field of research has received a great deal of attention over the last decades. However, most studies are limited to retrospective assessment methods that might fail to capture the dynamic nature of well-being within the context of children's everyday live. The present study attempted to fill this gap by developing and evaluating a novel ecological momentary assessment (EMA) tool, targeted at children in fourth grade, right before facing the mentally challenging time of school transition.

During the first stage of the research process, a qualitative workshop with 55 students was conducted to investigate which adjectives are feasible to assess affective states in this age group. A selection of eleven feasible items was generated. The second research stage comprised of a three-day pilot study with 30 participants evaluating the feasibility of the questionnaire and examining the relationship of two lifestyle factors, digital media use and social connectedness, with affective states.

The results of the pilot study support the use of the EMA diary to assess well-being in primary school children. While no significant effects of digital media use on positive or negative affect could be observed, there were some tendencies within the sample that might indicate that consuming no digital media or only long form digital media content is associated with higher positive affect than consuming both long and short form digital media content. Having fun with other children was found to be a significant predictor of positive but not negative affect. Conflict was not significantly associated with positive nor negative affect.

With regard to the preliminary evidence of the EMA diary's feasibility, future larger-scale studies should make use of similar assessment methods to further investigate well-being and influential factors in children and adolescents.

Abstract (German)

Das Wohlbefinden von Kindern als Forschungsgebiet hat in den letzten Jahrzehnten viel Aufmerksamkeit erhalten. Die meisten Studien beschränken sich jedoch auf retrospektive Erhebungsmethoden, die möglicherweise nicht in der Lage sind, die dynamische Natur des Wohlbefindens von Kindern im Alltag zu erfassen. In der vorliegenden Studie wurde versucht, diese Lücke zu schließen, indem ein neuartiger „Ecological Momentary Assessment“ (EMA) Tagebuch-Fragebogen entwickelt und evaluiert wurde. Dieser richtet sich an Kinder in der vierten Klasse, kurz bevor Beginn der mental herausfordernden Zeit des Schulwechsels.

In der ersten Phase des Forschungsprozesses wurde ein qualitativer Workshop mit 55 Schüler:innen durchgeführt, um zu untersuchen, welche Adjektive geeignet sind, um affektive Zustände in dieser Altersgruppe zu erheben. Eine Auswahl von elf geeigneten Items wurde erstellt. Die zweite Forschungsphase bestand aus einer dreitägigen Pilotstudie mit 30 Teilnehmer:innen, in der die Durchführbarkeit des Fragebogens evaluiert und der Einfluss zweier Faktoren, der Nutzung digitaler Medien und der sozialen Verbundenheit, auf Gefühlszustände untersucht wurde.

Die Ergebnisse der Pilotstudie unterstützen die Verwendung des EMA-Tagebuchs zur Erhebung des Wohlbefindens von Grundschulkindern. Während keine signifikanten Effekte von Mediennutzung auf den positiven oder negativen Affekt beobachtet werden konnten, gab es innerhalb der Stichprobe Tendenzen, die darauf hindeuten, dass der Verzicht auf digitale Medien sowie der Konsum von langformatigen Inhalten mit einem höheren positiven Affekt verbunden sind als der Konsum beider Formen digitaler Medien. Spaß mit anderen Kindern zu haben erwies sich als signifikanter Prädiktor für positiven, aber nicht für negativen Affekt. Streit stand in keinem signifikanten Zusammenhang mit positivem oder negativem Affekt.

In Anbetracht der vorläufigen Belege für die Durchführbarkeit des EMA-Tagebuchs sollten zukünftige, größer angelegte Studien ähnliche Erhebungsmethoden verwenden, um das Wohlbefinden und dessen Einflussfaktoren bei Kindern und Jugendlichen weiter zu untersuchen.

Wie geht es mir heute?

Tagebuch

von

.....

Tag 1

Uhrzeit: _ _MITTAG _ _ _

Im Moment fühle ich mich….

Gar nicht					Sehr
.. fröhlich	☐	☐	☐	☐	☐
.. entspannt	☐	☐	☐	☐	☐
..voller Energie	☐	☐	☐	☐	☐
.. stolz	☐	☐	☐	☐	☐
.. gut gelaunt	☐	☐	☐	☐	☐
.. zufrieden	☐	☐	☐	☐	☐
.. traurig	☐	☐	☐	☐	☐
.. einsam	☐	☐	☐	☐	☐
.. wütend	☐	☐	☐	☐	☐
.. ängstlich	☐	☐	☐	☐	☐
.. unglücklich	☐	☐	☐	☐	☐

Ich fühle mich:

Bitte mache ein Kreuz auf dem Strich.

müde ----------**wach**

chillig---------- **unruhig**

glücklich ----------**unglücklich**

Gestern Abend…

..habe ich Zeit verbracht mit…

Bitte kreuze an.

☐ Tiktok	☐ Netflix
☐ Instagram	☐ Fernsehen
☐ Youtube / Shorts	☐ Spiele am Handy / Computer

..habe ich das gegessen und getrunken…

Bitte kreuze an.

☐ Obst (Apfel, Banane..)	☐ Fruchtsaft
☐ Chips, Erdnussflips	☐ Kakao
☐ Süßigkeiten (Schokolade, Gummibärchen, Zuckerl)	☐ Fanta/Cola/ Sprite

Hattest du gestern Abend Streit?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Wenn JA, mit WEM? _____

Tag 1

Uhrzeit: _ PAUSE_ _ _ _

Im Moment fühle ich mich….

	Gar nicht				Sehr
.. fröhlich	☐	☐	☐	☐	☐
.. entspannt	☐	☐	☐	☐	☐
..voller Energie	☐	☐	☐	☐	☐
.. stolz	☐	☐	☐	☐	☐
.. gut gelaunt	☐	☐	☐	☐	☐
.. zufrieden	☐	☐	☐	☐	☐
.. traurig	☐	☐	☐	☐	☐
.. einsam	☐	☐	☐	☐	☐
.. wütend	☐	☐	☐	☐	☐
.. ängstlich	☐	☐	☐	☐	☐
.. unglücklich	☐	☐	☐	☐	☐

Ich fühle mich:

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müde ---------- **wach**

chillig---------- **unruhig**

glücklich ----------**unglücklich**

Seit meinem letzten Tagebuch-Eintrag…

..habe gegessen und getrunken…

Bitte kreuze an.

☐ Obst (Apfel, Banane..)	☐ Kakao
☐ Gemüse (Karotte, Gurke..)	☐ Fruchtsaft, Latella..
☐ Kuchen, Kipferl, Muffin..	☐ Fanta/Cola/ Sprite
☐ Chips, Erdnussflips	☐ Wasser
☐ Süßigkeiten (Schokolade, Gummibärchen, Zuckerl)	

Hattest du **Streit** mit anderen Kindern in der Schule?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Hattest du **Spaß** mit anderen Kindern in der Schule?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Tag 1

Uhrzeit: _ _FRÜH _ _ _

Im Moment fühle ich mich….

Gar nicht					Sehr
.. fröhlich	☐	☐	☐	☐	☐
.. entspannt	☐	☐	☐	☐	☐
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Hattest du **Spaß** mit anderen Kindern in der Schule?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Hattest du heute das Gefühl, dass du **genug Freunde** hast?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Tag 2

Uhrzeit: _ _MITTAG _ _ _

Im Moment fühle ich mich….

Gar nicht					Sehr
.. fröhlich	☐	☐	☐	☐	☐
.. entspannt	☐	☐	☐	☐	☐
..voller Energie	☐	☐	☐	☐	☐
.. stolz	☐	☐	☐	☐	☐
.. gut gelaunt	☐	☐	☐	☐	☐
.. zufrieden	☐	☐	☐	☐	☐
.. traurig	☐	☐	☐	☐	☐
.. einsam	☐	☐	☐	☐	☐
.. wütend	☐	☐	☐	☐	☐
.. ängstlich	☐	☐	☐	☐	☐
.. unglücklich	☐	☐	☐	☐	☐

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☐ Chips, Erdnussflips	☐ Kakao
☐ Süßigkeiten (Schokolade, Gummibärchen, Zuckerl)	☐ Fanta/Cola/ Sprite

Hattest du gestern Abend Streit?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Wenn JA, mit WEM? _____

Tag 2

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.. unglücklich	☐	☐	☐	☐	☐

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Tag 3

Uhrzeit: _ _MITTAG _ _ _

Im Moment fühle ich mich….

Gar nicht					Sehr
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Wenn JA, mit WEM? _____

Tag 3

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chillig ---------- **unruhig**

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Seit meinem letzten Tagebuch-Eintrag…

..habe gegessen und getrunken…

Bitte kreuze an.

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☐ Gemüse (Karotte, Gurke..)	☐ Fruchtsaft, Latella..
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Gar nicht	☐	☐	☐	☐	☐	Sehr viel

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Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Tag 3

Uhrzeit: _ _FRÜH _ _ _

Im Moment fühle ich mich….

	Gar nicht				Sehr
.. fröhlich	☐	☐	☐	☐	☐
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..voller Energie	☐	☐	☐	☐	☐
.. stolz	☐	☐	☐	☐	☐
.. gut gelaunt	☐	☐	☐	☐	☐
.. zufrieden	☐	☐	☐	☐	☐
.. traurig	☐	☐	☐	☐	☐
.. einsam	☐	☐	☐	☐	☐
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müde----------**wach**

chillig ---------- **unruhig**

glücklich ---------- **unglücklich**

Seit meinem letzten Tagebuch-Eintrag…

..habe gegessen und getrunken…

☐ Obst (Apfel, Banane..)	☐ Kakao
☐ Gemüse (Karotte, Gurke..)	☐ Fruchtsaft, Latella..
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☐ Chips, Erdnussflips	☐ Wasser
☐ Süßigkeiten (Schokolade, Gummibärchen, Zuckerl)	

Hattest du **Streit** mit anderen Kindern in der Schule?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Hattest du **Spaß** mit anderen Kindern in der Schule?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel

Hattest du heute das Gefühl, dass du **genug Freunde** hast?

	1	2	3	4	5	
Gar nicht	☐	☐	☐	☐	☐	Sehr viel