

# Augmented Reality in Education

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**Abstract**—Das folgende Paper befasst sich mit der Entwicklung, Anwendung und Analyse der Möglichkeiten von Augmented Reality in all seinen Formen im Hinblick auf Bildung in den verschiedensten Bildungsstufen und Formen

## I. EINLEITUNG

Augmented Reality (im Folgenden AR) ist eine Innovation, welche in den letzten Jahren immer mehr Akzeptanz und tatsächliche Anwendung in unserem täglichen Leben genießen konnte. Sie ist eine Technologie, welche es ermöglicht, digitale Informationen mit der echten physischen Welt zu überlagern und somit die persönliche Sicht "erweitern".

Dazu gibt es verschiedenste Innovationen, die dieses Konzept auf unterschiedlicher Weise ermöglichen. Durch diese Verschmelzung der digitalen und realen Welt eröffnen sich vollkommen neue Anwendungsmöglichkeiten, wie unter anderem interaktive Lernumgebungen, Unterstützung im medizinischen Bereich oder Unterhaltungs- und Unterstützungsmedien. Im Folgenden wird vor allem auf die möglichen Anwendungen im Bildungsbereich eingegangen.

## II. WARUM AR

AR bietet sich vor allem aus mehreren Gründen für eine Anwendung in den verschiedensten Bildungsmöglichkeiten an. Dazu gehört vor allem eine stärkere Gedächtnisleistung aufgrund von visuellen und interaktiven Inhalten, sowie ein personalisiertes Lernen durch Anpassung auf individuell nötigen Bedürfnissen [1].

Eine hohe Motivation unter den Schüler:innen kann mit Ansätzen einer spielerischen Bildung ermöglicht werden. Vor allem interessant ist die mögliche kontextualisierte Lernerfahrung, indem theoretisches Wissen in simulierten Umgebungen angewendet werden kann [2]. TODO

## III. ENTWICKLUNG

In den vergangenen Jahren ließ sich eine immer höherer Nachfrage für AR Technologien im Bildungsbereich feststellen. Vor allem in der Forschung ist dieser Trend sichtbar, in der tatsächlichen Anwendung Dies hat verschiedene Gründe.

## IV. AR-TOOLS UND PLATTFORMEN

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

### A. Software

Blabla

### B. Hardware

Number equations consecutively. To make your equations more compact, you may use the solidus ( / ), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash rather than a hyphen for a minus

## V. ANWENDUNGEN

**The class file is designed for, but not limited to, six authors.** A minimum of one author is required for all conference articles. Author names should be listed starting from left to right and then moving down to the next line. This is the author sequence that will be used in future citations and by indexing services. Names should not be listed in columns nor group by affiliation. Please keep your affiliations as succinct as possible (for example, do not differentiate among departments of the same organization).

### A. Primär und Sekundär

Headings, or heads, are organizational devices that guide the reader through your paper. There are two types: component heads and text heads.

Component heads identify the different components of your paper and are not topically subordinate to each other. Examples include Acknowledgments and References and, for these, the correct style to use is "Heading 5". Use "figure caption" for your Figure captions, and "table head" for your table title. Run-in heads, such as "Abstract", will require you to apply a style (in this case, italic) in addition to the style provided by the drop down menu to differentiate the head from the text.

Text heads organize the topics on a relational, hierarchical basis. For example, the paper title is the primary text head because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level head (uppercase Roman numerals) should be used and, conversely, if there are not at least two sub-topics, then no subheads should be introduced.

## B. Hochschule

Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation “Fig. 1”, even at the beginning of a sentence.

TABLE I  
TABLE TYPE STYLES

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy <sup>a</sup>		

<sup>a</sup>Sample of a Table footnote.



Fig. 1. Example of a figure caption.

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity “Magnetization”, or “Magnetization, M”, not just “M”. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”.

## VI. WEITERBILDUNG

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”. Avoid the stilted expression “one of us (R. B. G.) thanks ...”. Instead, try “R. B. G. thanks...”. Put sponsor acknowledgments in the unnumbered footnote on the first page.

## VII. POTENTIAL

Please number citations consecutively within brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]—do not use “Ref. [3]” or “reference [3]” except at the beginning of a sentence: “Reference [3] was the first ...”

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was

cited. Do not put footnotes in the abstract or reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors’ names; do not use “et al.”. Papers that have not been published, even if they have been submitted for publication, should be cited as “unpublished” [4]. Papers that have been accepted for publication should be cited as “in press” [5]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [6].

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